THIS WEEK'S National Petroleum NEWS

Coming Meetings

American Petroleum Institute, division of marketing, Stevens Hotel, Chicago, March 4. (Changed from May 13 and 14, Tulsa).

Western Petroleum Refiners Association, Elms Hotel, Excelsior Springs, Mo., March 10, 11, 12.

Michigan Oil Men's Association, Hotel Statler, Detroit, March 11, 12, 13.

Oil Equipment & Engineering Exposition, Los Angeles, March 16 to 22.

Ohio Oil & Gas Men's Association, Deshler-Wallick Hotel, Columbus, O., March 17, 18.

American Association of Petroleum Geologists, Gunter Hotel, San Antonio, Texas, March 19, 20 and 21.

Independent Oil Men of America, Chicago, March 23, 24. (Hotel not yet selected. Annual business meeting and election of officers).

American Chemical Society, Indianapolis, Ind., March 30 to April 3.

American Oil Burner Association, Ben Franklin Hotel, Philadelphia, Pa., April 13 to 18.

American Petroleum Institute, division of refining, semi-annual meeting, Hotel Statler, St. Louis, Apr. 15, 16.

National Petroleum Association, Hotel Cleveland, Cleveland, O., Apr. 23, 24.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 19, 20, 21.

American Petroleum Institute, Division of Production, Baker Hotel, Dallas, Tex., June 3, 4.

American Society of Mechanical Engineers, National Oil & Gas Power meeting, Madison, Wis., June 15 to 18.

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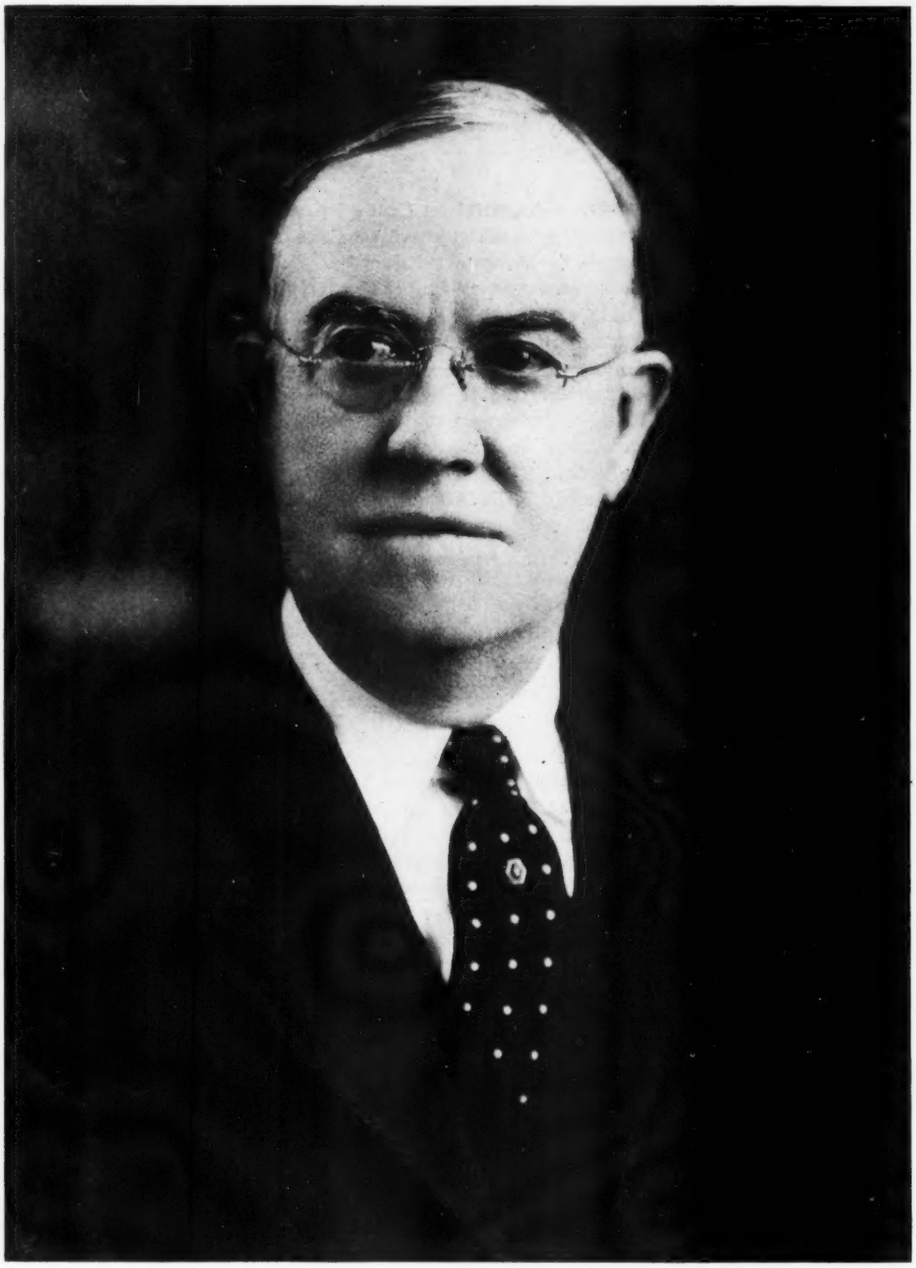

A. S. HOPKINS, president of the Standard Oil Co. of Kansas, began work in that company as a laborer in the construction of the refinery at Neodesha, Kans., and by successive steps went to the top of the company.

His youth was spent in Neodesha and he received his education in the public schools there and in the University of Kansas. It was in 1897 that he became connected with the Kansas company.

Experience as treater, stillman and assistant superintendent brought him the superintendency of the plant in 1913. In 1923 he became vice-president and general manager and in March 1927 he was elected president.

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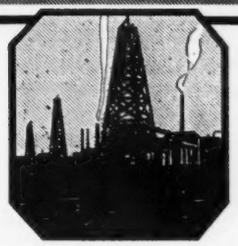

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Vol. 23 **CLEVELAND, February 25, 1931** **No. 8**

Effect of Potential on Crude Oil Prices Presented at A.I.M.E. Meeting

By J. C. Chatfield
N. P. N. STAFF WRITER

NEW YORK, Feb. 20

OIL wells now completed in the United States could produce 1,500,000,000 barrels of crude in 1931, Dr. Joseph E. Pogue, consulting engineer, told the American Institute of Mining and Metallurgical Engineers at its annual meeting here.

Without further drilling possible production would thus exceed demand by 70 per cent.

If all drilling of new wells were to cease, supply of crude oil would not be in balance with estimated demand for 28 months. At a subnormal rate of drilling calculated to bring in wells with a combined initial production of 2,500,000 barrels per year, it would require 50 months before demand would overtake supply, Dr. Pogue reported.

These conclusions were reached in a study undertaken to discover the effect on crude prices of unproduced potential production. The author had observed that, in the recent proration period, the price of crude oil has not followed a normal relationship to stored crude inventories as in the past.

Price has fallen while storage was being reduced, whereas normally it should increase. Dr. Pogue suspected that the pressure of potential was depressing the price, so he sought to measure the effect.

There has been a general recognition in the industry that potential production figures do not indicate the volume of crude oil which could actually be produced over any extended period. Previous to the present investigation by Dr. Pogue, there has not been a clear idea, as to what annual volume of production the present huge potential represents.

For that reason his study is one of the most significant economic works of the past year or so, giving, as it does, some basis for estimating the relationship of crude oil prices to know, but unproduced, oil reserves.

The speaker defined crude oil potential as "the quantity of oil that all the wells would make the first 24 hours if permitted to flow unrestricted." This corresponds closely to the "initial" of new wells which is the amount of unrestricted flow of the individual new well for 24 hours.

To discover how to translate current potentials into the volume of crude which could be produced in a given year, Dr. Pogue conducted a study into the amount of initial production needed each year to replace the combined decline of all wells completed and producing at the beginning of the year.

The study revealed that without new wells (in a period of no proration) production would decline 25 per cent in one year. With this factor it was possible to find the annual contribution to total output of combined or total initial production of new wells.

Over a period of 12 years it was discovered that new wells

A FURTHER article on the meeting of the petroleum division of the American Institute of Mining and Metallurgical Engineers, in New York Feb. 17 to 19, presenting the estimates made there by oil company engineers on future production possibilities of important areas, is to be found in this issue, starting on page 38.

Table 1

Determination of the Relation Between Initial Production and the Annual Rate of Production of Crude Oil in the United States

Year	1 Actual Production Mill. Bbls.	2 Estimated Production without drilling during year (75% of previous year's production) Mill. Bbls.	3 Difference to be contributed by aggregate initial production for year Mill. Bbls.	4 Aggregate initial production of new wells (a) Mill. Bbls.	5 Ratio of "difference" to aggregate initial Col. 3 Col. 4 (b)
1916	301	211	90	1.601	56
1917	335	225	100	1.511	67
1918	356	251	105	1.614	65
1919	378	267	111	3.554	31
1920	443	283	160	3.508	46
1921	472	332	140	2.828	50
1922	558	354	204	4.266	48
1923	732	419	313	6.105	51
1924	714	549	165	3.255	51
1925	764	535	229	4.300	53
1926	771	572	199	3.684	54
1927	901	579	322	4.918	65
1928	901	675	226	8.366	....
1929	1007	675	332	6.170	....
1930	896	756	140	9.956	....

(a) From Oil & Gas Journal. See Jan. 29, 1931, page 94.
(b) The median ratio is 52; thus the aggregate initial for any given year may be converted into its annual production equivalent by multiplying the aggregate initial by 52.

contribute an average of 52 times their combined initial production to the annual production total for the year. Table 1 shows how Dr. Pogue determined the relationship between initial production and the annual rate of crude production.

The table shows that, in the past three years, the aggregate initial of all new wells was much larger than previously. Part of this initial was not needed to replace declines of previous years and hence was built up as potential.

In Table 2 is shown the volume of surplus initial which has been built up as potential. The country's potential, i.e. surplus initial, was calculated by a large oil company last November at 13,800,000 barrels. Subtracting November output of 2,289,000 barrels per day the surplus or shut-in potential was then 11,500,000 barrels. This agrees quite closely with Dr. Pogue's estimate of a surplus of 11,067,000 barrels as of Jan. 1, 1931.

To arrive at the production equivalent of the present shut-in potential Dr. Pogue followed the same system developed in Table 1. That is he multiplied the potential or surplus initial by 52. In Table 3 will be found the results of this calculation.

This table indicates that 1930 output would have been 1,273,000,000 barrels if proration had not been practiced. The author calculated also that 1931 production would be 1,506,000,000 barrels without starting any new wells and with no proration. He calculated that old producing wells would produce 672,000,000 barrels, that shut-in potential would provide 574,000,000 barrels and estimated that wells now drilling would add 260,000,000 barrels to the output.

In his study of the effect of shut-in potential on crude price Dr. Pogue converted above-ground crude inventories into days' supply. These figures he plotted on an inverse scale in Fig. 1 adjacent to a curve depicting the average price of Mid-Continent crude.

Until 1928, when proration became common, the two lines followed each other closely. But with proration a wide divergence began, price falling while above ground inventories were kept fairly level. This led the author to conclude that potential has partly the effect on price, of oil actually produced

(*Continued on Page 22*)

Table 2

Determination of the Surplus Initial (i. e. Potential) Brought In in the United States in 1928, 1929, 1930

Year	1 Aggregate initial Mill. Bbls.	2 Initial needed to balance decline of old production (Col. 3 of Table 1 ÷ 52) Mill. Bbls.	3 Surplus initial left over in form of crude oil potential Mill. Bbls.
1928	8.366	4.350	4.016
1929	6.170	6.380	—0.210
1930	9.956	2.695	7.261
Total	24.492	13.425	11.067

Table 3

Annual Production in 1928, 1929 and 1930 Suppressed in the Form of Crude Oil Potential

Year	1 Surplus initial (Col. 3, Table 2) Mill. Bbls.	2 Equivalent in annual production (Col. 1 x 52) Mill. Bbls.	3 Actual production Mill. Bbls.	4 Corrected production if potential had been produced (Cols. 2 and 3, Mill. Bbls.
1928	4.016	208	901	1109
1929	—0.210	—11	1007	996
1930	7.261	377	896	1273

The Editors' Viewpoint

The Code Work Should Be Carried Forward

By R. B. Stafford

N. P. N. STAFF WRITER

THE American Petroleum Institute has before it a great opportunity to show real leadership in the marketing division of our industry. The opportunity is to steer the drafting of a code of practices for the marketing of refined petroleum products.

The marketing division desires a code which will serve as its guide and which will be fair and representative of as much of the thought of the marketing branch of the industry as is possible to write into it.

Above all the rank and file of the marketing division wants a voice in the new discussion and drafting of a code and the directors of the institute should see that star chamber or steam roller tactics do not prevail at Chicago next week. Such tactics could only result in suspicion, which surrounded the present code in its early days for the same reason.

Four general courses appear open to the industry at its meeting in Chicago.

The first is to endeavor to persuade the Federal Trade Commission to make permanent the 60-day rescinder of its order of rejection of all but Rules 4, 6 and 7 of the present code which it approved July 25, 1929.

The second course is to induce the commission to conduct a trade practice conference like the one held in St. Louis, Feb. 11, 1929, and let the industry work out a new code for the commission's consideration.

THE third course is for the industry to draft and adopt a new code, based on the best features of the present code, and to enforce its provisions with its own machinery, independent of Federal Trade Commission sanction or assistance.

The fourth course is one, we believe, most of the members of the marketing condition would avoid. It is to drop the present code, not attempt to offer the industry a substitute, and to return to the days of free and cut-throat competition that held forth before the industry attempted to end its costly and unsound practices in marketing.

The opinion has grown in the industry since the Federal Trade Commission announced Feb. 3 that it had decided a few days before to reject 18 of the 21 code rules and to rewrite two of the remaining three, that the industry should proceed with a simple and lawful statement of practices which are unsound economically and therefore to be eliminated. Such a statement or code could be adopted and enforced by the industry without contravening the restrictions of the Sherman and Clayton acts.

It is known that marketing and general executives of many of the large oil companies have consulted their lawyers since the commission rejected the majority of the present code and these lawyers have expressed their opinion that the rules of the present code do not violate any law. The present code could, therefore, be taken as a basis for a new code.

WHILE these attorneys feel that promulgation of a code by the Federal Trade Commission is desirable, they do not think it is necessary.

It is doubtful that the commission would consider making permanent its temporary withdrawal of its order of rejection. Although the commission has never announced why it rejected the 18 rules, it is undoubtedly true that it decided it was acting beyond its functions as defined in the act that created it, when it attempted to set up for business a list of things it could do or could not do fairly.

The act which created the commission empowered it to "prevent persons, partnerships, or corporations, except banks, and common carriers . . . from using unfair methods of competition in commerce."

The act did not define in any way the factors that were to be considered in determining what was an unfair method of competition in commerce. Business, and the commission, too, were left to conjecture what the framers of the law had in mind. The trade practice conference was an effort by the commission to help by giving business an idea of what it might do or not do. But in so doing it undoubtedly stepped beyond the boundaries of the Federal Trade Commission act. This is the opinion of able lawyers who have specialized in anti-trust and business law.

The commission pursued its policy of trying to help business until, we can assume, it real-

ized that not only its Group II rules in industrial codes were beyond its legal functions; but also many of its Group I rules were in that borderland of doubt which would not stand a great deal of investigation which might be decided upon at any time by Congress.

Little was left open to the commission but to withdraw to adherence to the letter of the Federal Trade Commission act and the first blow in the retreat fell upon our industry.

BECAUSE of this situation it would probably be useless for the industry to try to have the commission permanently withdraw its order of rejection. It would also probably be useless for the industry to draft a new code, or to rewrite the present code, and strive to get for it consideration and promulgation by the commission. Although sanction by a government bureau may be desirable, the commission has just proved that the industry would be operating on a frail structure which might be torn down at any moment opinion changed within the commission.

Standing on its own feet and adopting a code, or set of principles defining what is good sound marketing practice, without the paternal approval of the Federal Trade Commission or any other governmental agency, seems the best course for the marketing industry to follow. It could well start with the present code, which in the main has proven satisfactory.

To get full co-operation in any code a vast majority of the opinion within the industry must be reconciled to the provisions embodied in that code. The code must represent the thought of a majority of those persons engaged in the industry as well as a majority of the business done by the industry. To get this full co-operation the institute must see that every sound suggestion is given full opportunity of being heard. The marketing industry at large must sit in in all the discussions. These new discussions, and any resulting code, must not be the work of a small group of legal luminaries but the consolidated thought of active marketers. The lawyers' job should be advisory, leaving the main job of discussion and drafting to the men who are daily engaged in selling petroleum products.

SOME of the work at Chicago will have to be done in committee, but these committees should keep the rank and file of the marketing division advised. Those committees should feel that they are appointed by and are working for the rank and file of the industry.

What should specifically be avoided is the carrying on of this work in a closed meeting of institute directors and the later submission of the results to the industry at large, for its acceptance or rejection only. While the job may move more slowly with all the discussions carried on in open meetings, what is accomplished will carry more of the confidence of the entire industry with it.

(*Continued from Page* 20)

and placed in storage to await future demand.

In order to create a potential wells have to be drilled and gotten ready for production. A large part of the cost of the oil thus has been expended, even though the oil has not been brought to the surface.

"Obviously, if the shut-in production were actually produced," Dr. Pogue pointed out, "its effect would become that of actual production, the excess going into storage and adding to the weight of above-ground inventory.

"So long as the potential is held in the ground, however, the effect is less than if the oil were actually produced, for the reason that the lifting and storage costs are saved. Yet the effect is substantial because the drilling cost has been expended.

"The effect of the shut-in potential is obviously less than that of its annual production equivalent by some indeterminate percentage."

Finding that drilling costs are roughly one-half the sum of lifting and storage costs, Dr. Pogue took half of the annual production equivalent of shut-in potential as a basis for calculating the effect of potential on price. Adding half of the amount which potential would have placed in storage if it had been produced during the past three years the author made a new comparison of crude stocks against price.

The corrected inventory line in Fig. 1, giving weight to unproduced potential, is seen to correspond closely to the price curve of Mid-Continent crude.

Dr. Pogue explained to the A.I.M.E. that his inventory weight for shut-in potential is merely tentative at this time. Although he has been studying the problem for more than six months and feels that he has made a good deal of progress, he thinks that later it may be possible to establish a more exact discount factor to be applied to the annual production equivalent of potential.

As a result of his study the author indicated that, if proration were to be removed and all wells operated to capacity in 1931, the price of Mid-Continent crude would have an indicated value of 10 cents per barrel based on the past relationship of price to inventory. If all drilling were to be stopped for 28 months the indicated value of Mid-Continent crude at the end of that time would be $1.75 per barrel.

The adverse price effect of potential may be reduced by stopping the drill or increasing unit operation. In unit operations, he found the influence of potential was far less than in competitive pools.

The author told the engineers that if a price of $1.50 per barrel for Mid-Continent crude is desired, that crude inventories, including the effect of potential, must be cut to 225 days' supply, approximately one-third.

While above-ground inventory represents 227 days' sup-

ply now, if the correction factor of potential is added, the inventory jumps to 322 days' supply, from 666 million barrels to 953 million barrels.

Beecher Heads Petroleum Division, A.I.M.E.

NEW YORK, Feb. 20.—C. E. Beecher, of the Empire Companies, Bartlesville, Okla., was elected chairman of the petroleum division of the A.I.M.E. at its annual meeting which closed Feb. 19. He succeeds C. V. Millikan of the Amerada Petroleum Corp.

L. L. Brundred of Los Angeles, was elected associate chairman and H. C. George, of the University of Oklahoma, Norman, secretary and treasurer.

Members of the executive committee for the new year are Mr. Millikan, A. C. Rubel, Union Oil Co. of California, and J. R. Suman, Humble Oil & Refining Co.

Vice chairmen in different institute activities are as follows: production engineering, E. H. Griswold, Continental Oil Co., Ponca City, Okla.; Joseph Jensen, Associated Oil Co., Los Angeles; Earl Oliver, of Ponca City, Okla.; W. V. Vietti, of The Texas Co., Wink, Texas; Earl A. Trager, Tulsa; and R. E. Somers, of the Gulf Companies, Pittsburgh, are associate vice chairmen.

H. J. Struth, Gulf Publishing Co., Houston, is the new vice chairman for economics; Prof. George for engineering education; H. W. Camp, Empire Oil & Refining Co., Tulsa, for refining; and Earl Oliver for unit operation of oil pools.

TORONTO—Alberta's oil output in 1930 was 1,433,844 barrels compared with 999,152 barrels in 1929. December, 1930 output more than doubled December a year ago.

The Turner Valley field produced 1,314,039 barrels of naphtha and 50,545 barrels of light crude in 1930; Red Coulee, field, 53,917 barrels of light crude; Wainwright field, 9739 barrels of heavy crude and Ribstone and Skiff fields, 1873 barrels and 3731 barrels respectively of heavy crude.

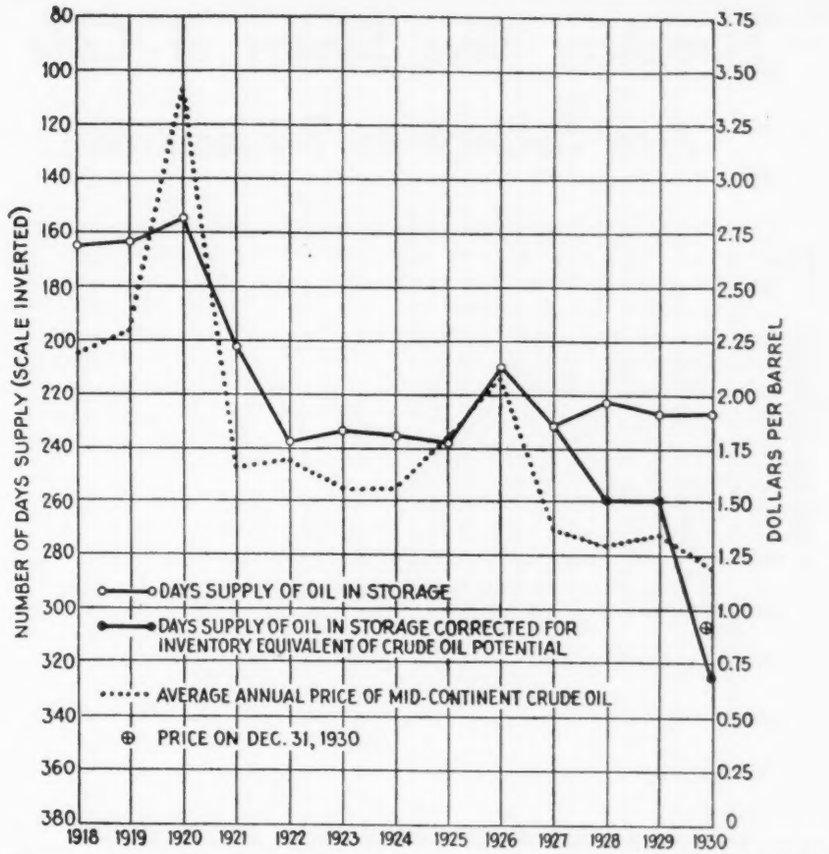

Fig. 1—Correlation of oil inventories and crude oil price by years, 1918-30

William T. Cushing Dead At Home in Dallas

HOUSTON, Feb. 19.—The body of William T. Cushing, pioneer pipeline builder who died at Dallas, was sent to Washington, Pa., Feb. 18, for burial. Mr. Cushing, who died at the age of 59, was known throughout the oil southwest and had an important part in the early pipeline construction of California.

Mr. Cushing laid the first gathering lines at Corsicana, in the year of the Spanish-American war, when the first commercial petroleum was produced in Texas. He went to Beaumont on the discovery of Spindletop in 1901, becoming pipeline superintendent for The Texas Co.

The first pipeline crossing Texas was built under supervision of Mr. Cushing in 1907, when The Texas Co. laid the first trunk carrier system from the Mid-Continent to the Gulf Coast. Later he moved to California, building the first pipeline from the San Joaquin Valley region across the mountains to the Pacific Coast.

Mr. Cushing spent three years abroad, building pipelines for the Roumanian government, returning to the United States where he was then identified with the Humble Pipe Line Co., the old Fensland Oil Co., and later various oil equipment organizations. He had lately represented the Dearborn Chemical Co., Chicago.

A. P. I. Report Delayed

DUE to Monday of this week being a legal holiday, the regular weekly report of the American Petroleum Institute on refinery operations was not received at Cleveland in time to publish in this issue. A week ago also delay in receipt of the report for that week made it impossible for NATIONAL PETROLEUM NEWS to publish the figures then. Publication of the figures will be resumed in the March 4th issue.

Humphrey Says Signers of Code Are Subject to Prosecution

WASHINGTON, Feb. 23

PROSECUTION of signers of the petroleum code of ethics is suggested by the view of the quality of such signing held by Commissioner W. E. Humphrey of the Federal Trade Commission.

"I have reached the following conclusions," says Mr. Humphrey: "That the trade practice conference rules, under the method of their adoption, constitute an agreement between the competitors who sign them.

"That any agreement among competitors to the effect that they will not use any specified lawful method of competition is a contract in restraint of trade. It is not the province of the commission to determine the degree of such restraint, unless the matter is properly presented in a case pending before it."

Commissioner Humphrey expressed those views before the commission announced the scrapping of the oil industry's code. They therefore did not attract attention beyond the general comment that the inclination of the trade body was to return to the county prosecutor point of view as to the sanctity of the widest possible extension of the anti-trust laws as agencies for the promotion of competition—until the county prosecutor should come to the conclusion that the maker of the hottest competition was trying to accomplish a monopoly.

In view of the fact that Commissioner Humphrey is regarded as the member who caused the commission to scrap all but three of the Group I and all of Group II rules of the oil industry, his views are of particular interest. His views may be said to be those of the entire body.

Signing of the code, in his eyes, constitutes an agreement between the signers to restrain trade. He makes something of the method of adoption of the rules. The method was for the men in the industry to hold a meeting, under the chairmanship of a commissioner, agree upon the rules and certify to the agreement by attachment of their signatures. That is what he calls a contract, even if it does not contain the quaint phraseology about the party of the first part and party of the second part.

A few days ago a report was started to the effect that the trade body had not really scrapped Group II rules and assertion to that effect was attributed to Mr. Humphrey. In the course of a talk about the report and other things relating to codes, Mr. Humphrey pointed to Rules 19 and 20 of Group II to illustrate what he meant by an agreement among competitors and a contract in restraint of trade.

RULE 19 says: "Coupon books or other scrip of any nature, if used, shall be sold and redeemed at their face value without any discount."

That Mr. Humphrey suggested was an agreement to eliminate price variations as a method of competition or as an agreement to maintain prices. Rule 20 he said was of the same character.

A common report in Washington, for some time, has been, that the prosecution of oil companies in California by Attorney General Mitchell was the thing that made the trade body go back on its practice of allowing industries to agree on restraints of competition which the ordinary man would not regard as violative of the law against restraints of trade.

Butchery of the oil code is said to have been intended as a warning to the oil industry that, although cut-throat price competition if carried to its logical end would result in monopoly, efforts to prevent such competition or to restore normality when such competition had broken out would not be tolerated by the Department of Justice, even if the trade body thought such efforts should not only be tolerated but actually encouraged.

At this time and in view of the attitude of Attorney General Mitchell the chances of the oil industry saving any part of its code seem to be too few to count with any certainty that anything regarded as a chance is really such.

Commissioner Humphrey said that while he had not examined the communications from the industry in respect of the code he had been told by colleagues that there were as many in approval of the commission's action as in opposition thereto, indicating that the industry is divided as to the value of the code or the possibility of making one that will pass muster, so long as Mr. Mitchell is attorney general.

Of course, Mr. Mitchell is not supposed to have anything to do with the trade body. The fact is that that body is so powerless with respect to its orders that it must ask the attorney general to go to court when it issues an order for a court order to enforce it.

Panhandle Protests Tax On Natural Gas

HOUSTON, Feb. 21.—Opponents of a 2-cents per thousand cubic feet tax on natural gas, proposed in a bill before the Texas legislature, held a mass meeting at Amarillo, Feb. 20. Operators and landowners attending the meeting took the position such legislation would force shutting down of all raw natural gasoline plants and carbon black furnaces in the Panhandle district. Lawrence Hagy, Amarillo operator charged that 65 plants employing 2100 workers and having a yearly payroll of $3,795,000 would be forced out of existence. Losses to landowners also were stressed as certain to result.

Kentucky Marketers Endorse a Code; Lease and Agency Condemned

LOUISVILLE, Ky., Feb. 20 THE Kentucky Petroleum Marketers Association, at its annual convention here this week, indorsed a code of ethics as an essential in the marketing of petroleum products. The present code was not indorsed, however, because of opposition to the lease and agency agreements now in practice.

The association will send to the Chicago convention March 4 of the division of marketing of the American Petroleum Institute, a committee of three men but other members were urged to attend if they can. The committee consists of C. E. Bauer, Continental Oil Co., Louisville, president of the association; C. E. Cantrill, Indian Refining Co., Lexington, chairman of the Kentucky code committee, and Herbert L. Clay, secretary of the association.

This resolution was adopted:

"Be it resolved by the Kentucky Petroleum Marketers Association, an organization of petroleum marketers within the state of Kentucky, after due consideration of published reports and available information that said association and marketers do hereby:

"1. Believe that a code of ethics is essential and necessary for the industry

"2. Regret the temporary withdrawal of code sanction by the Federal Trade Commission has placed a burden upon those accepting the code and may hinder future operation.

"3. Request and urge that the American Petroleum Institute in session March 2, 3 and 4 use every honorable means to persuade the Federal Trade Commission that a code of ethics is necessary and to provide a code under which operation may proceed for the benefit of the petroleum industry."

Officers and directors of Kentucky Petroleum Marketers Association. Front row, left to right: T. O. Baucum, Jackson Purchase Oil Co., Murray, second vice-president; C. E. Bauer, Continental Oil Co., Louisville, president, and J. M. Giles, Giles Oil Co., Cynthiana, first vice-president. Rear row: Herbert L. Clay, secretary and treasurer; W. S. Glore, Glore Oil Co., Danville, director; W. F. Gardner, Standard Oil Co. of Kentucky, Louisville, director, and O. B. Grigsby, Home Oil Co., Maysville, director

Lease and agency agreements as permitted by the present code were condemned by two members of the association in a discussion of the code.

L. J. Connolly, Continental Oil Co., Louisville, said the lease and agency agreement permitted doing almost all the things the code was intended to eliminate. He opposed the association indorsing the present code as long as lease and agency practices were permitted to be carried on as at present.

Paul G. Blazer, Ashland Refining Co., Ashland, said the lease and agency agreement caused independent dealer business—some of the best accounts a jobber may have—to gravitate to the major companies because the jobber found it more difficult to sign up dealers than the major companies.

He said a psychological factor was involved. The jobber's typewritten contract form lacked the pretentiousness of the major company's printed forms. A dealer would read through a typewritten contract and study its details but the dealer assumed in the case of a printed form that other dealers were being signed so he would sign, Mr. Blazer said.

HE ALSO said in substance it was easier for a high powered salesman from a major company to convince a dealer that he should become an agent of the major company than it was for the jobber, who in some instances may not have the financial resources of the dealer whom he was trying to sign up.

W. S. Glore, Glore Oil Co., Danville, pointed out that the resolution then being discussed did not indorse the present code but that it did put the Kentucky marketers on record as favoring a code which it was believed was essential to the marketing of petroleum products.

The association heard several speakers and re-elected its officers and directors. The officers and directors are: C. E. Bauer, Continental Oil Co., Louisville, president; J. M. Giles, Giles Oil Co., Cynthiana, first vice-president; T. O. Baucum, Jackson Purchase Oil Co., Murray, second vice-president; W. S. Glore, director; W. F. Gardner, Standard Oil Co. of Kentucky, Louisville, director, and O. B. Grigsby, Home Oil Co., Maysville, director. Herbert L. Clay, secretary and treasurer, is chosen by the directors.

H. M. Steindler, The Texas Co., Chicago, recounted the development of petroleum lubricants, the problems that had been solved, and some of today's problems. He said as long as there was advancement in industry refiners would continue to face lubrication problems.

M. E. MOSHER, an insurance broker from New York, told of the need for safety in the oil business. He spoke from the economic and not the humanitarian standpoint. He said unclean and disordered stations and equipment resulted in fires and accidents which would drive away customers.

R. B. Stafford, NATIONAL PETROLEUM NEWS, Cleveland, discussed merchandising petroleum products to motorists. He said the day was past when oil marketers could hope to have a profitable business by riding the wave of growing demand. Competition for business had become so great, he said, that profitable business could be attained only by paying more attention to selling than had been paid in the past. Study of market potentials, attention to quality, aggressive advertising in one form or another, and intelligent sales work were recommended as avenues to profits.

H. C. Kelting, secretary of the Motor Truck Club of Kentucky, solicited the co-operation of the oil marketers in the effort to combat the railroads which are striving to legislate trucks off the highways. He asked the association to appoint a delegate to a round table group of truck owners that is working to counter the railroad's national attack and to get uniform rules for motor transportation.

Mr. Gardner was master of ceremonies at the annual dinner, which was addressed by James Tandy Ellis, Kentucky humorist and columnist.

New Suppliers to Buy Underground Tanks

LOUISVILLE, Ky., Feb. 20.—Twelve Kentucky marketers have approved the plan promulgated by the Kentucky Petroleum Marketers Association for new suppliers of a gasoline account to buy the underground tank and fittings of a former supplier at a set schedule of prices.

The schedule follows: five-barrel tank $35; 10-barrel tank $45, and 20-barrel tank $80. If a tank is more than two years old a 25 per cent reduction is made from the schedule. Special adjustments are required for larger tanks.

Companies that have approved the plan are: Ashland Refining Co., Glore Oil Co., Gulf Refining Co., Indian Refining Co., Refiners Oil Corp., Shell Petroleum Corp., Standard Oil Co. of Kentucky, Stoll Oil Refining Co., Sun Oil Co., The Texas Co., Tri-State Refining Co., and Pure Oil Co.

New French Process for Synthetic Gasoline

LONDON, Feb. 17.—The French Academy of Science announced the invention of a new process whereby the propylene obtained in the preparation of gasoline by cracking can be formed into synthetic gasoline. Propylene passes over a silica gel at a temperature of 650 degrees C. (1202 degrees F.) and an important proportion of liquid hydrocarbides is obtained, formed by a mixture of non-saturated carbides and of aromatics, among which the principal products are benzine and toluene.

The present program for the development of the French refining industry will eventually mean refining 2,000,000 tons of crude oil per annum.

Lease and Agency Called Subterfuge To Circumvent Clayton Law

PEORIA, Ill., Feb. 20

THE lease and agency agreement form of marketing petroleum products is a subterfuge to circumvent the Clayton act, in the opinion of J. A. Bussian, Chicago lawyer, who addressed the annual meeting of the Illinois Petroleum Marketers Association held here Feb. 18 and 19.

"On its face," said Mr. Bussian, "it appears to be purely an agency agreement, appointing an agent to sell the company's goods exclusively. The agreement, however, is usually coupled with a lease agreement whereby the agent in the first instance leases his filling station to the company at a nominal or wholly inadequate rental and agrees to pay all the operating expenses of the station, the same as before he leased his station.

"In other words, all elements of a real agency are lacking, except that merchandise, that is petroleum products, the subject of sale, are placed with the so-called agent on consignment and the agent's profit is described as a commission.

"In all other respects he carries on the business in the same manner as though it were his own. The obligations of operating the station are his, and the license to operate must be taken out in his name, and all the elements of a sale contract are there.

"The agreement restricts the so-called agent to deal exclusively in the products of the company.

"Those schooled in the industry know the inducements which are made to secure such agents and that special and extra discounts are the leading factors in such inducements.

"Many companies are using this form of lease and agency and I am told that in a recent complaint filed with the Federal Trade Commission charging that the agreement violated Section 3 of the Clayton law, 92 companies are named as defendants (The commission no longer announces the filing of complaints.—Ed.).

"The evil or practice complained of, of course, is that the companies are securing exclusively to themselves by unlawful means, the most desirable outlets for their products upon the understanding or agreement that the customer will not buy goods of a competitor, which excludes each and every one of you from selling that customer.

"The complaint further charges that the agreement is a mere sham or subterfuge to violate Section 3 of the Clayton law and in reality is a clear contract of purchase and sale, and as such violates the law.

"THIS complaint is now being investigated by the commission. The precise question thus presented has never been passed upon by the Supreme Court of the United States, but the court has had occasion to pass on similar questions."

Mr. Bussian said that price discriminations in certain communities against other communities doomed the Independent marketers in the low price communities. Large companies, he said, were not so seriously affected because of their wider operations.

Some Chicago marketers, he said, had filed complaint with the Federal Trade Commission against two of the largest companies. One company in its answer blamed the other company, he said, and the other company claimed competition generally required the cut price. The commission is investigating the complaint, he said.

The price cutter or bootlegger, he pointed out, was the result of low wholesale markets which are brought about by overproduction of crude oil. He predicted price cutters would multiply until the crude situation is corrected.

Warren C. Platt, editor NATIONAL PETROLEUM NEWS, discussed the changing wholesale markets in the Middle West, especially in Illinois. Chicago had become the clearing house for spot gasoline from all refining groups in the Middle West, he said. Through the Chicago market passed gasoline from Indiana, Illinois, Ohio, Kentucky, Michigan, Louisiana, Arkansas, Kansas, Oklahoma and Texas.

Illustrating this assertion Mr. Platt cited spot gasoline sales in Chicago and Oklahoma last October. That month 16 of 24 carload marketers in Chicago sold 2590 cars of gasoline and all 27 refiners in Oklahoma sold only 471 carloads spot.

He told of the increased output of gasoline the last few years by refiners of the Central States until in 1929 and 1930 output of Indiana, Illinois, western Ohio, Michigan, and central Kentucky plants had exceeded the output of Oklahoma and Kansas refineries combined.

"Mid-Continent refiners now are equipping themselves with a new weapon in the battle to retain their gallonage in the great markets of the Middle West," Mr. Platt said. "That is the gasoline pipeline. In view of these preparations to reach the rich Middle Western markets, no jobber should feel that he will have any difficulty in obtaining a supply of gasoline to meet the demands of all the customers he can get into his stations.

"WHILE it is to be expected that the gasoline pipelines will not be used as price cutting agencies, nevertheless the lower cost to the owners of the lines of putting gasoline into Illinois, will undoubtedly assure a relatively low wholesale price as long as there is a surplus of gasoline. With their

gasoline pipelines the Mid-Continent refiners will be able to meet competition more easily than they have in the past with high rail rates."

Dudley Monk, treasurer of the Independent Petroleum Association of America, spoke of the problems of the producers and the association's activities for a tariff of crude.

Officers and retiring directors were re-elected. They are: C. P. Poland, Poland Oil Co., St. Louis, president; George Prescott, Prescott Oil Co., Dixon, vice president; I. A. Archambault, Pennsylvania Oil Co., Evanston, director; C. S. Rosenthal, Apex Motor Fuel Co., Chicago, director, and B. L. Majewski, Deep Rock Oil Corp., Chicago, director. E. G. Friend, Gold Star Oil Co., Havana, was elected a director to fill a vacancy. G. A. Primm, secretary of the association, was re-elected by the directors.

Chain of Highway Bus Hotels To Be Built in East

A CHAIN of stations to provide for the physical comfort of bus patrons of the country has been announced by Highway Stations Inc.

E. C. Learock, president of the new corporation, has announced the first station will be built near New Brunswick, N. J., on a highway where there is a dense bus and motor traffic between New York and Philadelphia. It is expected to be ready for operation by June 1.

Present plans contemplate erection of 10 stations within 150 miles of New York. Sites are being selected now and plans made to have the first group of plants in operation within about two years.

Each station is to be built on a 5-acre tract, at least 250 feet from the highway. There will be ample toilet facilities and restaurant accommodations for bus patrons and motorists. On the highway, in front of the station, will be a gasoline and oil station.

No decision has been made yet as to whether the oil stations will be leased to oil companies or operated by the corporation itself. Highway Stations, Inc., will not undertake to sell gasoline and oil to the bus companies themselves, however, except in case of emergency, it announces.

At certain stations the company plans to provide hotel rooms. These will be only at points at the end of day bus runs on interstate lines, where it is found that a sufficient number of passengers stop for the night. The first station will not include hotel accommodations at first. Cost of individual stations will range from $35,000 to $75,000.

Before erecting a station the new company obtains long-term contracts with bus companies to make meal stops there. Bus operators also are giving the new company statistics showing the average number of passengers carried so that the station builder can plan the station to care adequately for the known demand.

Bus transportation companies have indicated their chief need in developing traffic volume is to provide adequately for meals and comfort of passengers at stations which can handle the business with dispatch and enable the bus drivers to keep on schedule. Small town and hot dog stand stops have been deficient in this respect, it is said.

In addition to the lunch room for bus passengers the company plans a separate dining room at each station for motor tourists. Parking space will be available also for this class of patron.

Vacuum Oil-Standard Suit To Go to Supreme Court

WASHINGTON, Feb. 23.—Attorney General Mitchell has not yet formally decided to appeal the Vacuum-Standard anti-trust suit.

Ever since he decided to bring the action, however, it has been his intention to obtain, if possible, the opinion of the U. S. Supreme Court upon his proposition that the merging of the two companies would be a violation of the old Standard dissolution decree. If he had won in the court of first instance it would not have been possible for him to have compelled consideration of the question by the higher court, if the oil companies had decided that they would not go up.

However, it is the understanding that the oil companies are just as anxious to take the opinion of the highest court as Mitchell. In the final analysis, inasmuch as the allegation is that the companies are proposing to disregard the dissolution decree, any interpretation, construction or application of the decree by any tribunal other than the Supreme Court would not be determinative of the issue.

Ever since the lower court has given its opinion the Department of Justice has been going over the whole matter with a view to a further battle. Determination by Mitchell not to take an appeal would probably cause an explosion in Congress because there is a large percentage of the membership of that body that at least professes to believe that a rigorous and technical enforcement of the anti-trust law is in the public interest. That element would accuse the Attorney General of betraying the public interest if Mr. Mitchell decided that he was satisfied with the decision of the trial court.

Even if, as has been suggested, the litigation is a friendly one with the Hoover administration entertaining the hope that it will get whipped, a decision by an inferior court would not be a good political foundation upon which to rest.

It is possible that the preliminary steps to get the case to the Supreme Court will be completed before the end of this term of that tribunal in June. However, it is unlikely that the case will be argued before next fall.

What Roads Will Do With Rate Decision Is Now Moot Question

By A. E. Heiss

N. P. N. STAFF WRITER

WASHINGTON, Feb. 23

IN THE history of railroad freight rate regulation by the federal government, begun in 1887, there probably has never been such a complex matter before users of the railroads as that created by the decisions of the Interstate Commerce Commission in its two big oil investigations made public last week.

Allowance of four months to the railroads in which to make the revision of rates is a gesture hardly worth mentioning. If any revision is completed in four years the fact will be worth setting forth in red ink. The revisions, even when made, will likely have but little resemblance to the adjustments suggested in the two decisions.

Obviously the decisions of the commission are based on the false premise that the railroads have a virtual monopoly of transportation. The regulating body was not frank enough in making its determinations to declare that the big question for the railroads to decide was not how much they could take from the shippers of petroleum products, but how much traffic they could hope to retain, not on increased rates, but at the present rates.

Instead of the rate body declaring that fact it allowed one of its members, Commissioner Eastman, to merely call attention to it by saying that the carriers might well disregard the rates prescribed in the decisions and devote their attention to the existing competition to which they are subject for this desirable traffic, as well as the competition which can be foreseen in the near future.

Throughout the opinion of the majority and in the separate expressions of commissioners runs emphasis on the fact that the rates prescribed are maximum rates below which the railroads may go if they will avoid unjust discriminations.

In fact if the opinion were reduced to its essentials it would run to this effect that "shutting our eyes to the changes in conditions that have taken place in the last ten years, these rates we prescribe would be the highest reasonable ones you railroads might charge. Some of the shippers have urged us to tell the railroads to pay attention to the competition of pipe lines and tank trucks but the law does not allow us to require you to meet competition. We think, however, you should remember that there is competition and that perhaps you had better do something about it."

WHILE there has been an unofficial estimate that the rate increases and reductions granted in the decisions would about balance each other in the matter or revenue for the railroads, the fact is that, if the railroads brought their rates up to the levels indicated by the Commission, and the traffic did not fly from the rails, the shippers, using that word to mean both dispatchers and receivers of freight, would have to pay much higher rates in the southeast and the east. Also they would pay low rates from points in the southwest to the gateways through which oil traffic passes to other parts of the country and relatively high rates within the southwest.

Rates in the southwest have been on a low level, on account of the great volume of petroleum products refined in that territory that must find a market outside the southwest. A glance at the accompanying table of present and prescribed rates, between typical points of origin and destination shows many more increases than reductions. The prescribed rates, in all cases, may not be just what the commission intended.

IN HIS dissent, Commissioner Eastman pointed out that the prescribed rates on petroleum were higher than on other commodities of similar or greater value, as for instance, iron and steel, cement, paper, lumber and the like, all of which are of greater value a ton. The commissioner suggested that rates in the southeast and east equal to 30 per cent of the first class rates would give the railroads a generous return over the cost of service on products he estimated to have an average value of less than $25 a ton. That is a queer way to value petroleum products, perhaps, but it permits a comparison with other products that move in lesser volume but at perhaps lower cost to the railroads.

Eastman was so disgusted with the outcome of the two cases he suggested that the Commission, to be consistent, should reopen the Mid-Continent case of 1925 and revise upward the rates from the Mid-Continent field to the eastern territory, to make it look natural in comparison with the levels of rates in other territories.

He said the rates prescribed in that case, to enable Mid-Continent refiners to get their products to the gateways such as Chicago and St. Louis and intermediate points, were about 17 per cent of the corresponding first class rates, while the levels prescribed in the east and southeast were 32.5 per cent of first class and with-

Table of Present Rates Between Important Oil Shipping Points, and Prescribed Rates as Set Forth in, or Estimated from, the Recent Decision of the Interstate Commerce Commission. (Cents per hundred pounds.)

FROM	TO	Present Rate	Prescribed Rate
Tulsa, Okla.	Terre Haute, Ind.	39	42
	Columbus, O.	53½	54
	Pittsburgh	61	62
	New York	77	74
Wood River, Ill.	Syracuse, N. Y.	47	50
	New York	54	55½
	Toledo, O.	29½	34
	Buffalo, N. Y.	37	44
Louisville, Ky.	Atlanta, Ga.	41½	44
	Charlotte, N. C.	49	48
New Orleans	Montgomery, Ala.	32½	36
	Atlanta, Ga.	41½	43
Louisville, Ky.	Detroit	29	31
Philadelphia	Washington, D. C.	22½	21
North Texas Field	Memphis, Tenn.	30	34
	Mobile, Ala.	42	46
	Atlanta, Ga.	*	59
Wichita Falls, Texas	Kansas City	29½	31
	St. Louis	32½	34
	New Orleans	33½	46
Ft. Worth, Texas	Sweetwater, Minn.	39½	26
Wichita Falls, Texas	Houston	39½	34
Port Arthur, Texas	Paris, Texas	39½	32

*Combination on the Mississippi

in the southwestern territory about 23 per cent of first class.

Rates in that part of the east between the Mississippi and the Buffalo-Pittsburgh line are, in spots, about 90 per cent of fifth class. Fifth class has been a movable festival, ranging from 35 to 40 per cent of first class. In that part of the east on the sunrise side of the Buffalo-Pittsburgh line oil rates have been a hodgepodge, but the general idea is that they have been higher than west of that line. In the southeast the rates have not been related to anything.

The prescribed rates constitute a beautiful salaam to the goddess of uniformity. The rate body has been worshipping at the shrine of that goddess, which was not a bad thing to do while the railroads were virtually without competition. The worship of uniformity was begun about 1920, when the competition did not amount to anything, and has continued since then notwithstanding the change in conditions. The railroads themselves are in part responsible for that. The redeeming fact about these decisions is that the Commission has emphasized the fact that the rates prescribed are maximum rates from which the carriers may depart if they eschew unjust discriminations.

Uncertainty as to the rates prescribed arises from the fact that no one who undertakes to make a compilation of the prospective rates can have in mind all the things he must use in making his calculations. Of course where the Commission has made specific rates there is no question about the figures used.

However, when tariffs come to be framed there may be conditions requiring them to be changed, a thing which the Commission often has to do.

Herewith is a table of rates, mostly specific ones, but a considerable number the result of calculations to learn the things the railroads are expected to do.

TORONTO—Dr. J. O. G. Sanderson, geologist for Imperial Oil, Ltd., was elected by the Alberta Society of Petroleum Geologists as its president for the ensuing year. He succeeds B. F. Hake of the Nordon Corp.

Other officers elected for 1931 were: Dr. A. E. Cameron, University of Alberta, vice-president: E. H. Hunt, The Texas Co. of Canada, Ltd., business manager, and J. B. Webb, Hudson's Bay Oil & Gas Co., secretary-treasurer.

New Gas-Making Process Is Announced

CLEVELAND, Feb. 21.—A new method for converting heavy oil residues into gas suitable for heat, light and power purposes is announced by the company recently organized to develop the process and to install and operate plants for generating gas for commercial purposes. The new company is named the Standard Hydrogenation Corp. and is headed by H. S. Rubens as president, and H. C. Wade as chairman of the board.

The process by which this gas is to be manufactured has been known for several years as the Wade process for cracking petroleum, to produce a gasoline known as "Wadeoline."

According to the announcement five plants are to be erected in North Carolina, of five units each, costing $100,000 per plant. The gas will be supplied to surrounding cities and communities which now have no provision for obtaining gas.

W. C. Teagle, president of the Standard Oil Co. of New Jersey, has issued a statement that the Standard Hydrogenation Corp. has no connection whatever with the Standard of New Jersey, or the Hydro Patents Co., which owns the patents for the hydrogenation process developed in Germany and continued by the Standard in this country.

Mr. Teagle says: "the term 'hydrogenation' if applied to high temperature oil decomposing of this kind has not the meaning generally attached to 'hydrogenation process' in the oil industry at the present time. The type of plant required, the technique used, and the products obtained are radically different. The similarity between the process of the Standard Hydrogenation Corp. and the process of the Hydro Patents Co. is therefore believed to be verbal only, if it exists at all."

Dealer Stations Succumb to Discount Plea, Company Stations Stand Pat

By E. L. Barringer

N. P. N. STAFF WRITER

BIRMINGHAM, Ala., Feb. 20

GASOLINE may be purchased at a reduction of 2 cents at service stations in Birmingham if the customer will do a little judicious shopping and bargaining.

Motor oil also may be purchased at a discount of 5 cents a quart with the same effort.

These price reductions were revealed in a survey of 25 stations in Birmingham. Stations were chosen indiscriminately in various sections of the city. All stations sold branded gasoline and oil; 24 sold major company brands, one was a local jobbing company.

None of these stations was openly a price cutter. All stations, except one, quoted first the regular prices of 21 and 24 cents a gallon, and many had these prices posted on the pump.

The survey was made by driving an automobile with an Ohio license to the gasoline pump island. When the attendant said his gasoline prices were 21 and 24 cents he was asked if he had a 19-cent price on his goods, or if he offered a reduction to salesmen.

Stations operated by oil companies did not offer a reduction. The attendants asked if a courtesy card was carried. When none was produced the attendant suggested that a card could be obtained easily by applying to the Birmingham main office, or offered to take the application at the station.

Most dealer stations, excepting those for one major oil company, offered little resistance to the suggestion that a discount be given. Although most operators offering a discount said they stood the entire amount, one dealer said his jobber made up the full amount if the reduction was on a commercial account sale, and another dealer said his jobber would split the 2 cents on gasoline.

Following are the highlights of the survey to buy gasoline at a reduced price:

The first station visited in the survey was a company operated outlet of the Gulf Refining Co., in a poor residential district on a main traffic street to a better section.

When asked if he could not make a better price than the regular market, the attendant replied that 19-cent gasoline could be purchased at several stations in the city but that the waste of gasoline in hunting up these stations would be more than the savings.

The next stop was more encouraging. Instead of opening with the regular market price the manager's first offer was 20 cents on a benzol blend and 22 cents on Ethyl gasoline. He talked about the quality of his merchandise then made his rock bottom offer of 19 cents for regular, but stayed at 22 cents for Ethyl.

This dealer was handling gasoline of the General Oil Corp., a local jobbing company. The Ethyl brand was Loreco. He said the General Oil Corp. made up the loss on gasoline if it was sold to a commercial account.

After more talk about his products he was asked about motor oil prices. A reduction of 5 cents a quart was offered immediately, making Havoline oil 25 cents and his Speed oil brand 20 cents a quart. The dealer made no inquiry as to the business connection of his customer, but he did say that these discounts were given only to truck owners, salesmen, and two-car owners.

Five gallons of Standard Ethyl gasoline were purchased at 22 cents a gallon at a dealer station. The attendant was asked if he offered a discount to salesmen. After consulting the dealer inside the station, he returned to announce that salesmen were entitled to 2 cents a gallon off and that 5 cents a quart was the reduction on Mobiloil and Standard Oil motor oils.

At a Sinclair dealer's station a discount could be obtained on a truck or by an individual operating three or more autos. Two cents would be allowed off on gasoline, and the dealer said he would stand half the discount, but since his jobber did not share any reduction on motor oil he could not offer this below the regular price.

Two dealers handling products of The Texas Co. refused to lower their prices. One said his company did not permit any dis-

WHILE on his trip through the southeast, Staff Writer Barringer heard rumors in several cities that discounts were being given at stations to cash gasoline buyers, although the full retail price was posted.

To ascertain the extent of such secret price cutting, he made a survey by driving to many stations in Birmingham.

Stations operated by the oil companies refused to lower their prices when the request was made for the "usual" discount.

But many brands of gasoline and motor oil of the major companies were available at cut prices at dealer stations, when the "salesmen's" price was asked for.

count off the service station price. The other suggested that possibly a credit and discount arrangement might be obtained by applying to the company's headquarters.

But at two other dealers for The Texas Co. a reduction was offered with a minimum of bargaining. These dealers said they shoulder all the discount and that none was absorbed by the wholesaler.

The first of these dealers quoted the market price of 21 and 24 cents. Upon being asked about a discount to salesmen he hesitated then offered to sell at 2 cents less.

When no gasoline was purchased the dealer explained at some length that he seldom reduced the price.

"There is one fleet of trucks in this neighborhood that buys its gasoline here and The Texas Co. handles the arrangements," he continued, "but the only discount I would give on private cars is to the owner of five autos." Since he offered a discount without probing into his customer's private affairs the compliment was received graciously.

At the other dealer of The Texas Co. two discount arrangements were offered. Again the dealer said he was taking all the responsibility for any price reduction.

This dealer offered a discount of 2 cents on gasoline and 5 cents a quart on motor oil on a charge account, payable weekly, twice a month, or whatever time plan was convenient.

His second discount arrangement was a complete lubrication job at 5 cents with the purchase of an oil drain at the regular price. The usual price for lubrication was $1, but as an inducement to buy oil the customer was charged only a nickel with an oil drain.

A dealer for the Shell Petroleum Corp. was quite prompt in reducing his gasoline price 2 cents when the magic word "salesman" was mentioned. But he stood pat on his oil saying the company had just made a general reduction to 25 cents a quart.

The desire of an attendant at a company operated station of the Pan-American Petroleum Corp. to have us make out a credit application blank required some rapid thinking to find an excuse to refuse the offer.

Discounts were not usually given, the attendant said, but he thought it could be arranged if a charge account were opened.

The attendants at three stations of the Wofford Oil Co., all dealers, were firm in asking the full price. One attendant wavered slightly. He suggested taking the question up to the manager, but was doubtful that even then a discount would be given.

"It makes no difference whether you buy one gallon or a thousand. Our price is just the same," said the attendant at another station.

Standard Oil Co. of Kentucky company operated stations also refused to succumb to a discount. Possibly a reduction would be made on a charge account if the customer operated trucks in addition to passenger autos, but that would have to be determined by the company's credit department, station attendants said.

Considerable embarrassment was experienced at the last station visited. This was a company operated station of the Gulf Refining Co.

An attendant was on each side of the auto. When they were asked what price would be made to a salesman the attendants became inquisitive as to a salesman for what company, where was the company's headquarters, and what credit arrangements had been made with the Gulf company.

The attendants then suggested that an application be made for a courtesy card at Gulf's local headquarters as this was the customary method of handling such business.

"And don't forget that we got mighty good gasoline," said one attendant as we left. "Ethyl has been added to our No-Nox gasoline and we'd like to have you buy your gasoline here while you are looking up a courtesy card."

Sinclair Picking Up Crude From Oklahoma City

TULSA, Feb. 21—Sinclair Refining Co. executives assert they are making good progress in obtaining the 50,000 barrels per day of Oklahoma City crude which the company offered a week ago to buy for 67 cents per barrel. They declined to say what part of the amount had been offered, but said that some pipeline connections were being made.

In an effort to get a greater outlet for the field, Governor Murray summoned executives of principal buying companies to his office last Friday for a conference. He declined to reveal what progress he made. There has been some increase in takings by pipeline companies other than Sinclair and it is apparent that an effort is being made to absorb the increase in allowance recently given the field by the corporation commission, amounting to 35,000 barrels daily.

Hall & Briscoe, Oklahoma operators, have sold to the Indian Refining Co. 248,000 barrels of crude which Champion Refining Co. had moved for the producing firm to storage at Enid, Okla. Champlin is to deliver the oil to the pipeline of The Texas Pipe Line Co., which will in turn deliver it to the Texas-Empire Pipe Line Co. for movement to Lawrenceville, Ill.

Reinhardt Heads Kettleman Hills Association

LOS ANGELES, Feb. 20.—William Reinhardt, vice president in charge of production for Shell Oil Co. was elected to the position of manager of the Kettleman North Dome Association at a meeting of the board of directors of that body in Los Angeles, Feb. 17.

To conform with a section of the by-laws of the association that dictates the manager shall not be affiliated with any company involved in the unit plan of development, Mr. Reinhardt will resign his position with Shell.

J. U. Stair, production manager for Shell, was elected to Mr. Reinhardt's place on the board of directors and R. E. Collom, Continental Oil Co. was made vice president of the association, an office formerly held by Mr. Reinhardt.

Regulation of Trucks and Buses Is Sought in Texas

HOUSTON, Feb. 19

LEGISLATIVE guns are in position in Texas for a first skirmish in the general transportation battle to be waged by railroads, on the one hand, and truck—train and bus owners, on the other.[1]

Bills attempting drastic regulation of motor buses and trucks are now before the Texas legislature, which has been asked:

(1)—to reduce their legal sizes and loads;

(2)—increase registration fees; and

(3)—give the railroad commission enlarged regulatory powers over their operation.

Without specific reference to the bills introduced, Governor Sterling has expressed decided approval of rigid regulation of motor carriers, by way of safeguarding life and property; protecting highways from undue wear and tear; and for the purpose of evening up the competition of motor and rail carriers.

Railroad officials and their counsel are reported from Austin as "keenly observant but inactive on legislation so far." It is expected, however, that their hands will be shown next week when the various motor bus and truck regulatory bills come to open hearing in legislative committee.

Proposed procedure after the hearing is for a sub-committee to redraft bills already introduced and if possible incorporate all of them into one general measure.

In addition to bills already introduced, Representative Petsch, of Fredericksburg, has announced he will offer a measure making it mandatory on the state commission to consider rail service in granting bus and truck certificates, or routes. The present law forbids such state action with regard to trucks and buses, although railroads are subject to this control under the Interstate Commerce Commission.

Petsch is on record as saying, "we cannot let the railroads be ruined for civilization; and development requires them. What is fair for the railroads is certainly fair for the trucks and buses."

Railroad officials declare their lines are "getting hard up" and are menaced by decreased earnings both in freight and passenger business. In this respect, the official reports of the railroad commission at Austin bear them out. Sixty passenger trains have been discontinued in Texas in the last two years, but to some extent the privately owned passenger car is a factor.

One of the bills now before the legislature is on weight limitation, fixing the maximum load at 5000 pounds; 10,000 pounds gross for truck and load. This would reduce cotton transportation to 10 bales to the load, maximum.

Permitted width of load would be reduced also from 96 to 84 inches; height from 14 feet to 12 feet; and length of one unit of truck and trailer would be limited to 145 feet.

Speed limits would be set at 25 miles an hour for large trucks and 35 miles an hour for motor buses.

Among other provisions the bill mentioned would prohibit joint ownership by any one company of buses or trucks and railroad properties, would bar discriminatory rebates by motor carriers and would allow two years for any rail system to dispose of trucks and buses now operated.

Another bill is designed to prohibit operation of so-called "contract carriers" without permits. It would require a certificate of convenience and necessity of all motor carriers.

Registration fees of trucks, tractors and trailers would be increased under a third bill. Fees provided would range from 40 cents a hundred pounds on trucks weighing up to 6000 pounds, equipped with pneumatic tires, (50 cents if equipped with solid rubber tires) up to $10 a hundred pounds for trucks weighing 26,000 pounds, equipped with pneumatic tires, or $12 equipped with solid rubber tires.

The bill provides also that no vehicle with four wheels having gross weight exceeding 22,000 pounds, nor one with six wheels exceeding 30,000 pounds, shall be registered.

[1] NATIONAL PETROLEUM NEWS, pages 31-32, Feb. 11, 1931.

Marketing Committee Meetings Announced

NEW YORK, Feb. 23.—In addition to the national conference on marketing which will hold sessions the entire day and evening of March 4 at the meeting of the American Petroleum Institute's division of marketing at Chicago, these committees will meet March 3 at the Stevens Hotel:

Fire prevention; automotive and railroad transportation; accident prevention in marketing; disposal of marketing wastes; and these subcommittees of the standing committees on railroad transportation.

Bureau of Explosives regulations group; car service; diversion and reconsignment; freight classification; and railroad equipment.

The marketing division's general committee meets March 2 under the chairmanship of E. G. Seubert, president, Standard Oil Co. of Indiana.

The board of directors of the institute meets during the morning of March 3.

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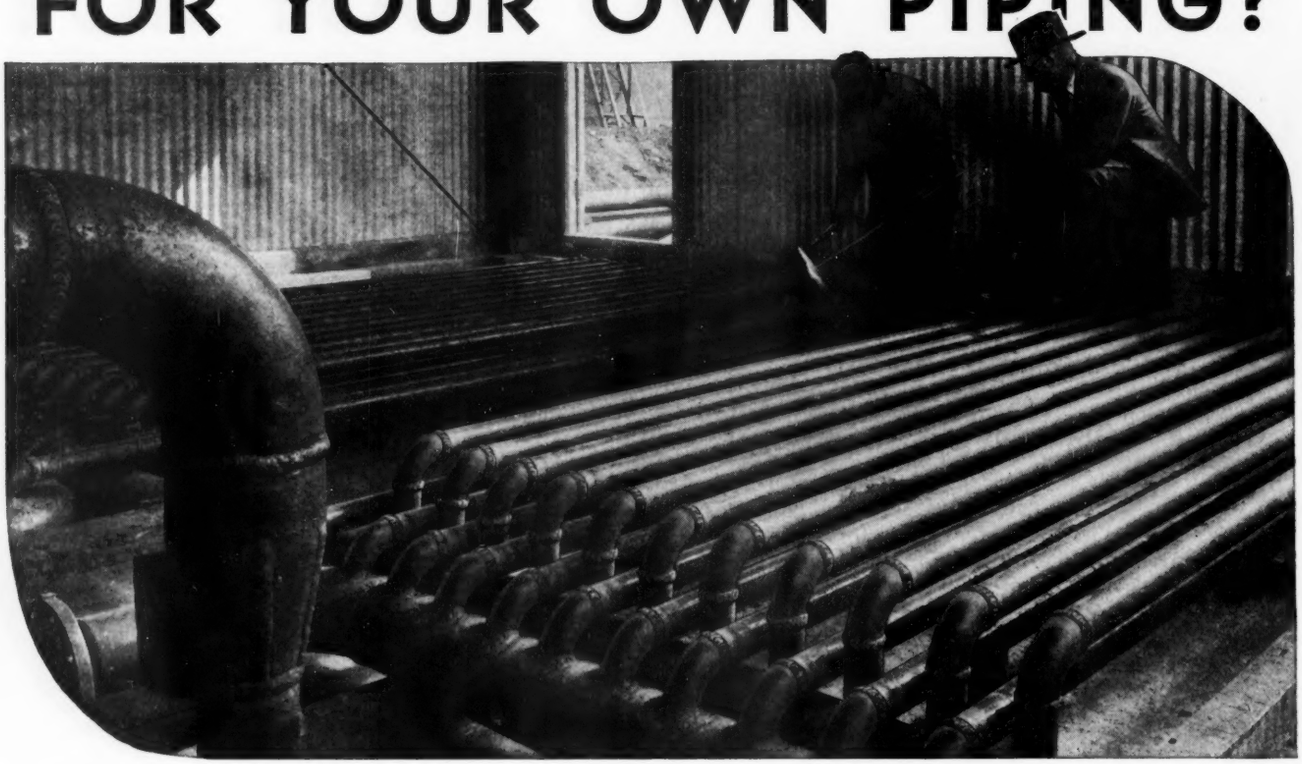

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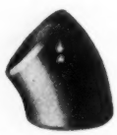

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No Thinning of Outside Wall—No Buckling of Inside Wall

Petroleum Import Restriction Measure Must Ride Some Revenue Bill

By A. E. Heiss

N. P. N. WASHINGTON REPRESENTATIVE

Washington, Feb. 23

IN A MILITARY way of speaking, the zero hour in the fight of the independent oil producers for legislation restricting imports of crude and prohibiting imports of refined products into this country should come within the week. That applies whether the independent organization elects to fight for a duty or restrictions in the nature of an embargo.

Passage of either the Capper or the Garber bill limiting imports as a distinct measure always has been out of the question. One or the other must be attached to some other bill as a rider. The board of strategy of the independents, believed to be headed by Senator-elect Gore of Oklahoma, naturally has not revealed what plans it has made.

Hearings have been completed. Legislation, if there is any, must be based on the fear of either or both the House and Senate that, unless something is done for the independents, they have enough supporters in one or the other house to force an extra session of Congress by preventing the passage of some necessary appropriation bill to which their own measure is hitched.

In the last three weeks there has been evidence of heavy public sentiment against an extra session of Congress. Senator Borah, who earlier said he would fight to force an extra session if draught relief of the sort favored by him was not voted, has not renewed his threats. Nor have the independent oil men said anything on the subject.

Party lines have been obliterated in the fight by the independents, as they were in their first campaign at Washington, this time for a tariff. Representative Garner of Texas, Democratic leader of the House, has been one of the most persistent advocates of restriction. In addition to advocating the passage of the Garber restriction bill, which is the same as the Capper bill, he has suggested a congressional investigation of the oil industry in aid of the independent oil producers.

Russell B. Brown, secretary of the Independent Petroleum Association of America, which is fostering the independents' campaign, answering a question by Garner, said that the independents would welcome such an investigation. But he also said they desired the passage of the Garber bill, as a sort of stay of execution pending the making of such an investigation.

THE hearings were marked by the appearance on the witness stand in behalf of restriction of E. B. Reeser, president of the American Petroleum Institute. He was at pains, however, to make exceedingly plain that he was appearing as president of the Barnsdall Corporation and not as the head of the institute. He explained that that organization was composed of men holding all shades of opinion on the subject and therefore could take no position.

Among opponents of the restrictive legislation was Representative Nelson, of Maine. Representative Garner asked him if he favored the free importation of wood pulp or pulp wood from Russia, implying that the man from Maine was an ardent protectionist for all things produced by Maine but a free trader when it came to petroleum and its products.

Nelson turned the point, rather cleverly many thought, by saying he was opposed to the importation of anything made by convict or forced labor.

H. H. CHAMPLIN, president of the Champlin Refining Co., Enid, Okla., supported the Garber bill, although he said that he was opposed to proration, regarding it as illegal. Imports, he said, had to be restricted to prevent further breaks in the price of oil but he indicated he did not believe in efforts to interfere with the working of the law of supply and demand.

In his testimony Mr. Reeser said the price of all petroleum products was too low and that it cost close to 8 cents a gallon to produce gasoline. While he favored a complete embargo, he said he thought a tariff of about $1 a barrel would be the best thing for the industry at this time. In answer to Representative Garner's question about a congressional inquiry, Mr. Reeser expressed the belief that the institute, for which he said he was not speaking, would welcome a fair and thorough inquiry.

Those mentioned here as appearing for or against the Garber bill do not constitute all the appearances before the committee. For days there was a stream of witnesses, bankers and lumber men from Kansas, labor men from the southwest and Washington and a procession of congressmen, all expressing the hope the bill would be passed on account of the good effect on the labor and business situations.

Opposition to the measure had its inning Feb. 17. Among those objecting to the passage of the bill were W. C. McTarnahan, New York, represent-

ing the American Oil Burner association, who thought the unemployment situation would be made worse instead of improved by passage of the bill; George M. Rommel, Savannah, Ga., industrial commissioner of that city; Paul H. Harwood, vice president of the Pan American Petroleum and Transport Co.; Albert R. White, Associated Industries of Massachusetts; J. B. Klumpp, chairman of the gas committee of the American Gas Association; Representative Greene of Florida and Harold B. Walker, New York, representing the Pan American Petroleum & Transport Co.

Pipe line divorce proceedings begun a month ago by Representative Hoch, of Kansas, and backed by some of the independent producers is dead so far as this session of Congress is concerned. At a hearing on the Hoch bill, given by the House committee on interstate and foreign commerce, such hostility was shown by members that, if the backers of the bill had asked the committee to make a report on the measure, it would undoubtedly have been unfavorable. The hearing was held Feb. 17 and 18.

ONLY two persons were heard, Charles E. Bowles, statistician for the Indenendent Petroleum Association, and A. S. Ritchie, of the Derby Oil Co., Wichita, Kans. They presented masses of figures. Mr. Bowles showed the necessity for getting the crude from the mid-continent, the area of greatest production, to the east, the area of greatest consumption and of large refining capacity. Mr. Ritchie obviously intended the committee to infer the bad effect on prices of a community of interest in buying, transporting, refining and marketing petroleum products,by the large integrated companies.

The railroads, which have adopted a program calling for the divorce of the pipe lines from the oil producing and refining companies, were not represented at the hearing on the Hoch bill. One man employed by the Association of Railway Executives looked into the hearing room while the talking was going on but did not stay.

E. B. Reeser, president of and Fayette B. Dow, counsel in Washington for the American Petroleum Association, attended the hearing. Mr. Dow said the institute had appointed a committee to study the matter but that it was not ready to say anything on the Hoch bill. He suggested grant of time for preparation, but Chairman Parker of the committee negatived the idea saying that the institute had had a whole week in which to prepare for the hearing.

MR. DOW suggested that, while the oil industry had been investigated 13 times in the last ten or 15 years, it was not prepared at any and all times to discuss everything that might be brought up. Mr. Hoch, author of the bill, who had explained its object to be divorce of the pipe lines so that they would only be common carriers, chose to regard that as a sneer at the government or Congress but Mr. Dow said that was the farthest possible from his mind.

Both formal witnesses, upon being pressed, expressed the opinion that separation would be in the public interest. Mr. Bowles, who, time and again said he merely desired to present facts, leaving inferences and conclusions to be drawn by Congress, was pressed into expressing the belief that, if there was a separation, a new method of purchasing would grow up and that thereby the independent producers would be benefited. During the time he was presenting figures pertaining to the ten large Standard and ten large non-Standard integrated companies, Mr. Bowles said he was not making charges against any one but merely presenting figures.

It was thought that, when the independents asked for a hearing on the Hock bill, the fact would prove embarrassing to the Association of Railway Executives. Backing of the bill and hearing on it at this session seemed to cause embarrassment—but not to the railroads. The embarrassment seemed to lodge in the office of the Interstate Commerce Commission. Chairman Parker asked that body to comment on the measure.

In answer to that it said it had no views to express on the question of policy. However, it did suggest that, if Congress thought it desirable to enact a divorce decree, the Hoch bill be so revamped that the commodities clause would do the thing intended. It said that all it could say about the matter was to call attention to parts of reports made by it showing unsatisfactory and sometimes unlawful situations growing out of the community of interest between a shipper and a railroad.

It suggested that the Hoch bill be made the vehicle, if Congress deemed the legislation wise, forbidding any common carrier to transport any product "mined or produced by it, or under its authority, or produced by or under the authority of a company which directly or indirectly controls it or is under control with such carrier, or which it or any such company may own in whole or in part, or in which it or any such company may have any interest, direct or indirect, except such articles or commodities for its own use."

ADVOCACY of such a revision of the commodities clause by the commission surprised those familiar with the position it had caused the Attorney General to take in the suit brought by him to divorce the Elgin, Joliet & Eastern from the United States Steel Corporation, namely that it was unlawful for that railroad to carry any of the products of the steel corporation units. The commission persuaded the Attorney General, some months ago, to bring that suit on the theory that the commodities clause, as it now reads, applies to railroads owned by industries notwithstanding that, as the courts have construed it, it applies only to commodities, owned or produced by the railroad, or in which it has an interest.

Death of this attempt at divorce at this session of Congress, leaves the railroads unhampered in their efforts to create sentiment in behalf of a divorce of the pipe lines in accordance with the program they adopted in New York last November.

Goodyear performance on its other trucks caused Eastern Oil & Gas Corp. to equip its newest tank car with Goodyears

61,200 POUNDS ON 18 TIRES

"The satisfaction received from Goodyear Tires on our fleet of trucks," says a letter from Eastern Oil & Gas Corp., of Riverhead, Long Island, N. Y., "induced us to specify Goodyear equipment on our new 5,000-gallon capacity semi-trailer. These Goodyear Truck Balloons have seen over 6,000 miles with no appreciable wear."

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ON YOUR NEW TRUCKS SPECIFY GOODYEARS

GOODYEAR

TRUCK BALLOONS

MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND

Rusk-Gregg Greater Threat to Stability Than Oklahoma City Field

NEW YORK, Feb. 20 THE Rusk-Gregg area of East Texas is a greater threat to stability of the oil industry in 1931 than Oklahoma City, according to views expressed at the annual meeting of the American Institute of Mining and Metallurgical Engineers here Feb. 17-19.

Each year the A. I. M. E. devotes two or more sessions to extensive reviews of producing operations in domestic and foreign fields. The engineers discuss the future outlook of various fields as well as recapulating progress in the past.

This year East Texas cropped up for general discussion at the final meeting of the engineers, after having been reviewed at the group session particularly devoted to production developments.

While little is known yet as to the extent of production, in East Texas, there is more than a suspicion in the minds of the engineers and geologists that production may extend over a large part of an area possibly 25 miles long and three miles wide.

M. G. Cheney, president of the Anzac Oil Corp., Coleman, Texas, reported in his formal paper that the district has great potentialities. "Proration seems to be the only hope of preventing excessive production from this new producing area," he said.

"Failure of the large Kelsey structure in western Upsher county, the usual lenticular nature of shoreline sand deposits, the thinness of pay in wells so far completed and the lack of active demand for new supplies of crude render difficult both the appraisal of this district and predictions as to how profitable and aggressive its development will be."

Assertions were made at the general session that the field is off monoclinal character. Production is thought to be in the Woodbine sand where it thins out and disappears at an old shore-line.

Dry holes have proved that the Joiner discovery well was drilled near the eastern edge of the sand body, it was brought out. To the west the sand becomes thicker but the drill has not discovered the western productive limit.

Expectations are that a thicker sand body will be found in wells to be drilled to the west. Wells there are expected to have a longer life because of the greater body of sand.

It is not known yet whether production will be continuous through the area or whether the oil is coming from separate nosings. If continuous and with thicker productive sand bodies to the west the field may be of the utmost importance. Sand pressures are uniform at about 450 pounds in all wells drilled and gas/oil ratios are low.

THE district is favorable for speculative enterprises of small capital since wells may be completed at a cost of about $22,500 and there are many small tracts. As a result production will be a difficult achievement, the engineers believe. Operators appear willing to go ahead with development in the face of low prices and uncertain market.

The past year saw an active search for other domal fields similar to Van in northeast Texas, but without result, it was reported.

Other important developments of the year in Texas, as outlined by Mr. Cheney, include the rapid competitive development of Darst Creek, and the orderly and highly successful development at Van.

In the entire Permian basin of West Texas and southeastern New Mexico potential dropped during 1930 in spite of the addition of 1,000,000 barrels of potential at Hobbs. It may be that 1929 will prove to have been the all-time peak year for West Texas production.

W. E. Hubbard, division superintendent of the Humble Oil & Refining Co., and H. E. Crum, district geologist of the Skelly Oil Co., discussing the Panhandle of Texas, reported fields along the Amarillo arch from 20 to 30 per cent developed. Recovery from the Lower Permian and Upper Pennsylvanian may range between 750 and 900 million barrels. Production to Jan. 1, 1931, in the Panhandle was reported at 157,294,000 barrels from 2201 wells. Wells drilled so far are expected to have an ultimate production of over 200 million barrels.

In the Gulf coast region of Texas and Louisiana, two new domes and seven new structures were put in the producing column in 1930, reported L. P. Teas of the Humble Oil & Refining Co., This compares with 13 domes and one structure brought in as producers in 1929. But a total of 14 new producing formations were tested in 1930 and new flanks were tested on five domes previously being produced.

No definite new domes have been located by the large amount of geophysical work done during the year.

Oklahoma

Henry A. Ley, Tulsa consulting geologist, devoted most of his review to fields discovered prior to 1930, since there were no wildcat discoveries of major significance during the year.

Producers of Oklahoma City have invested at least $132,590,000 there exclusive of administrative charges, damages, lease equipment, interest, taxes and operating expenses, he stat-

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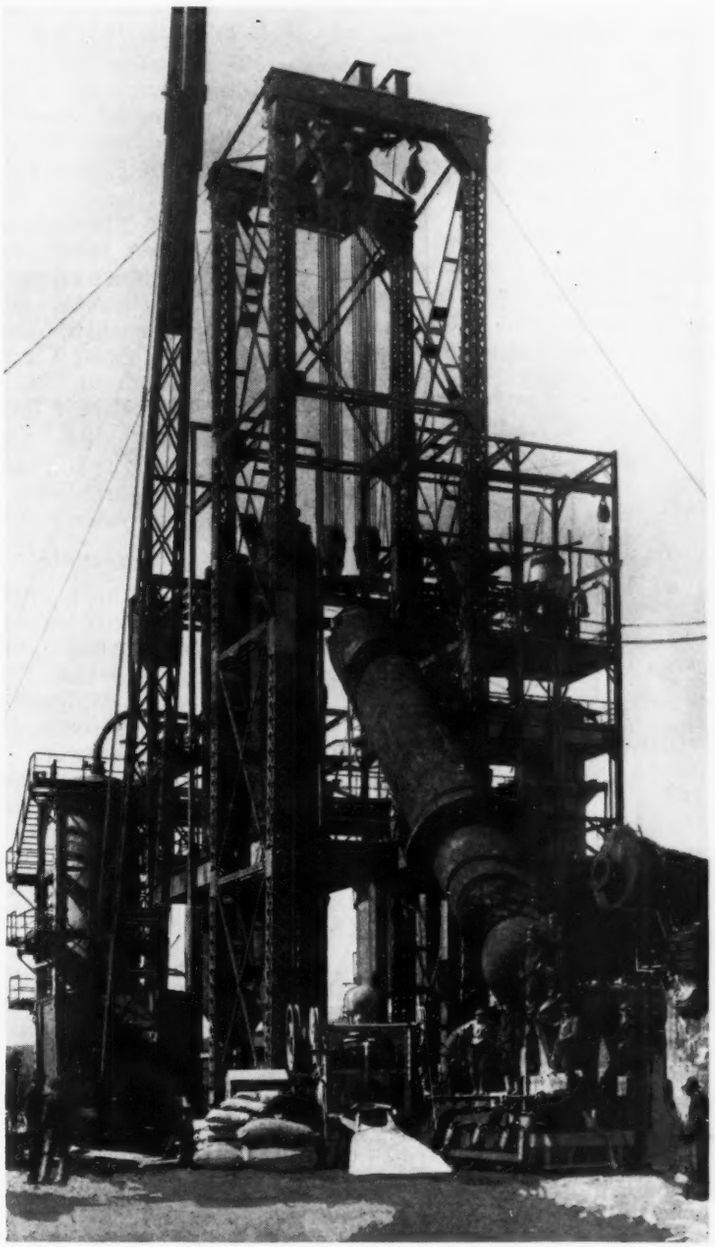


Progress erection soaking drums for Latonia Refining Corp., Latonia, Ky. From plans and specifications by Standard Oil of Ohio.

The DRESSER Company

Engineers and Constructors

The Arcade Cleveland, Ohio

ed. Oil sold to Jan. 1 has brought in about $55,273,761, of which the producers' share has been about $48,364,541 and the royalty owners $6,909,220.

At the end of the year Oklahoma City had produced 43,214,955 barrels, an average of 63,927 barrels per well.

Seminole fields produced 83,270,206 barrels in 1930 bringing total production for these fields from discovery to 492,537,346 barrels.

Kansas

Mr. Ley also reviewed Kansas production, where there were a number of wildcat discoveries during the year but slow development on account of proration. Most activity was in McPherson, Rice, Russell, Reno, Kingman and Stafford counties.

During the past two years Kansas production has been nearly as large as in its peak year of 1918, when output averaged 118,502 barrels per day. Last year the daily average was 117,065 barrels.

California

Drilling operations were reduced 28 per cent in California in 1930, reported B. E. Parsons of the General Petroleum Corp. There were 755 wells completed as compared with 910 in 1929. At the close of the year there were 220 wells drilling.

Intensive wildcatting of 1929 which discovered the Elwood and Kettleman Hills fields continued during the early months of the year. As a result there were a number of significant developments, including:

San Joaquin Valley: Discovery of high gravity oil in the Temblor sands on the North Belridge field, renewed search for deeper sands at Lost Hills, discovery of normal high gravity crude in Kettleman Hills north dome, and discovery of oil in Santa Margarita sands southeast of Bakersfield.

Los Angeles Basin: Deeper producing zone in West Coyote field, development of deep extensions at Long Beach and development of Playa del Rey.

Coastal District: Westward extension of Elwood, extension of productive thickness of oil zone in Ventura Avenue field, westward extension of Rincon field into ocean, probable eastward extension of Lompoc field and development at Capitan, eight miles west of Elwood.

Unitization of Kettleman Hills was regarded as one of the most significant achievements of the year.

Venezuela

Drilling in both proven and wildcat territory declined in Venezuela in 1930, said C. W. Hamilton, of the Venezuela Gulf Oil Co. Wildcatting was cut sharply late in the year, owing principally to poor results in the earlier campaigns.

Of the 2555 wells completed in that country, 1571 were in production Jan. 1. Their status is as follows: flowing 652, pumping 170, gas-air lift 193 and closed in 556. The number of wells being artificially produced increased in 1930.

The only area of outstanding importance discovered in 1930 is located about 15 miles southeast of Lagunillas village on the east shore of Lake Maracaibo at Pueblo Viejo.

In 1931 total production should decline. It is expected that drilling will decline abruptly. Exports may drop as much as 10 per cent.

Russia

The Soviet Union fulfilled its assigned program in the operating year 1929-30 under the five-year plan, Basil B. Zavoico of Tulsa, consulting engineer, reported. No basic improvements have been noted in the industry there and disorganization has increased so that supply and transportation is approaching a breakdown. Labor problems are becoming increasingly difficult.

An accompanying table shows Russian production in recent years and the amount estimated for 1931 to 1933 under the five year plan. The author gives figures representing what may reasonably be expected as compared with the Soviet estimate.

To Discuss Evaporation Losses

LOS ANGELES, Feb. 13.—Light oil losses in lease tankage will be discussed at the spring meeting of the American Petroleum Institute's division of production, Pacific Coast district, which will be held March 20, in the Engineers Club here.

Design and installation in double and triple trapping layouts will be compared with vapor recovery systems for prevention of light oil losses. Late developments in arrangement of cellars, rig foundations and auxiliary machinery for deep well drilling will be considered. Speakers are to be selected.

Russian Petroleum Production by Fields

(Millions of Barrels)

	1916	1922-23	1927-28	1928-29	1929-30[1]	1931 Estimated Soviet	1931 Estimated Rsnbl.[2]	1932 Estimated Soviet	1932 Estimated Rsnbl.	1933 Estimated Soviet	1933 Estimated Rsnbl.
BAKU	55.81	25.30	54.15	62.10	73.60	98.00	80.00	120.00	90.00	146.00	100.00
N. Caucasus	12.73	10.90	26.50	32.40							
		(undivided)									
Old Grozny (old and new)					44.11	58.00	55.00	61.50	50.00	68.00	50.00
Maikop					3.00	8.80	6.00	17.00	15.00	28.40	30.00
New Grozny						1.10		5.60	10.00	14.50	20.00
Kuban								2.90	3.00	14.50	15.00
Others										7.30	0.00
Emba	1.82	0.97	1.82	1.86	2.46	2.90	2.90	7.50	3.00	20.30	5.00
Saghalien		none		0.23	0.51	1.90	1.90		3.00		5.00
Oural		negligible			0.04						
Turkestan	0.44		0.26	0.26	0.28	0.90	0.90	1.85	3.00	3.60	5.00
Balance (?)						8.40	0.00	23.65	3.00	27.40	5.00
Totals	72.80	37.17	82.60	96.80	124.00	180.00	146.70	240.00	180.00	330.00	235.00

(1) The Soviet Government currently discontinued the former uneven operating year policy, and is substituting the regular calendar year. The months of October, November and December, 1930, have been classified as a special "Shock Quarter" in which it was planned either to catch up with the 5-year plan, or to create reserves for the coming three years.

(2) Reasonable.

Proration Now in the Politicians' Hands With All Issues Befogged

By Lawrence E. Smith

N. P. N. STAFF WRITER

TULSA, Feb. 21

WITH nearly all the politicians in Oklahoma running to take part in the proration wrangle, the air down here has become distinctly thick.

Foggy utterances, public branding of this or that man as an enemy of the public welfare and all manner of turgid speeches have led the average oil man to wonder what has come over the industry here.

For the moment the main target is the bill introduced a week ago by Rep. Cham Jones, on which the house oil and gas committee is now conducting hearings. This proposed law would repeal the statutes under which proration is now ordered and substitute therefor a simple law against waste. It would be distinctly understood in the new law that "economic waste" is legal, or at least not covered by statute.

Opponents of proration have had their inning the past week and on Feb. 24 the committee will start hearing those who would retain the present laws. The opponents did not appear in very great force and their principal thesis is that proration is a gigantic conspiracy gotten up by the Standard companies and other big fellows for the purpose of taking a stock at the small producers.

The opponents are placing considerable reliance upon the old-fashioned petition method. Circulated throughout the state are blanks on which everybody is urged to affix his name, address and occupation, and saying that "we the undersigned" ask the governor, senate and house to repeal the "present price-fixing proration laws of the state."

The implication in the petition is that Oklahoma's depression has come solely through proration. It says that "we, individually and collectively, pray that the governor and the members of the legislature, in considering the needs of the people, will not be influenced by the sinister propaganda of the Standard Oil-Dutch Shell Group and allied importers of foreign oil, who seem to desire to profit by a continuation of favoritism in proration."

E. B. Howard, former member of Congress, is president of the Oklahoma Oil Association and his name appears at the top of the petition as the one to whom it should be returned. David Logan, chairman of the house oil and gas committee, has said the legislators need no bales of petitions to help them, but Mr. Logan is merely a successful oil man.

WHILE the Jones bill is the central point at this moment, there are so many meanderings in the whole controversy, that, if one oversleeps and doesn't get time to read the morning papers, he may easily miss an important chapter. The side excursions into seemingly irrelevant things really constitute a serious menace to the main journey.

For instance, there is the seemingly interminable argument as to the part H. F. Sinclair, head of the Sinclair Oil interests, played in the writing of the majority report of the special committee appointed by Governor Murray to look into the status of the law and proration. That report advocated repeal of the present laws and substitution of a statute on waste. Five members of the committee signed it. The other four reported to the governor that nothing had been done by the committee that would be of the slightest help to the governor in his legislative program. They set up a defense of proration, however.

The charge was quickly made that Mr. Sinclair had been overly interested in what the committee was doing and the argument still rages. The issue is now dead, or should be, but no terminal point is in sight. Oh, well, there are people who still get quite heated over the causes of the Civil War.

ONE chapter in the controversy was added when Wirt Franklin, head of the Independent Petroleum Association of America, member of the committee, told the house oil and gas committee that Mr. Sinclair had personally conducted something like a poll of the committee in advance of its report. This was promptly answered by Pat Malloy, Tulsa attorney, who is special counsel for Sinclair interests. He asserted that the Franklin statement probably was inspired by "the failure of Mr. Franklin to make personal Sinclair connections," and called the charge "Standard Oil propaganda."

Mr. Sinclair seems to have been definitely cast for the role of villain in the drama, with C. A. Owens, who was chairman of the committee, as deputy, or assistant, villain. This is not to infer that they have anything in common except as they are both on the same side, for Sinclair has a considerable interest in the state while Owens' connection with the industry anywhere is quite vague.

The governor took a whack at Mr. Sinclair this week, in connection with the Sinclair of-

fer to buy Oklahoma City crude for 67 cents. The whole affair has gotten into bitter personalities and the governor is expert at this sort of fighting. The cooler heads among oil men on both sides of the battle regret that the issue could not be confined to the business and economic questions involved, but it goes to show that politicians are usually incapable of conducting argument without heaving bricks.

Another point that has come to be of serious concern is that of the umpires' salaries. It has long been known that Ray M. Collins, the chief proration umpire for Oklahoma, gets $2000 per month and certain expenses; that the money is paid by the oil companies whose properties are being prorated; that Otto Bradford, Oklahoma City umpire, is paid in the same manner, though not in as high amount; that both of them and their assistants are appointed by the state corporation commission as deputy conservation agents. The matter has been testified to in court several times and each time it has occasioned fresh alarm. Proration opponents are making the most of it and are demanding that, if proration is to be carried on, the enforcement must be entrusted to men who are actually paid by the state to do the job.

The governor announced late in the week that he believes the people of the state favor proration, if fairly enforced. He then appointed a committee of two to investigate the charges that certain companies have been permitted to take unfair advantage of the proration orders. The committee is Roy Johnson, Ardmore oil man, and Cicero Murray, the governor's cousin.

With business considerations pretty well lost in the turmoil, the professional politicians will go ahead with the show. Another act of the comedy-drama will be staged Feb. 24 in Oklahoma City when a mass meeting will be held to talk about proration, farm relief, state government, etc. It is advertised as a public debate on proration and everybody is invited to come and talk. Scott Ferris is chairman of this rodeo. He was once in Congress.

Oklahoma City Yields Big Wells As Drilling List Shrinks

TULSA, Feb. 21

WITH the list of active operations in the Oklahoma City field growing quite short—93 was the count at the end of the week—Some of the completions are keeping up the "gusher" fame of the field. The principal ones during the week were contributed by Phillips Petroleum Co., which still has 15 left to complete in its present program.

Phillips' No. 1 Blaizier, NW NE SE NW of 10-11-3, topped the Wilcox sand at 6320 feet and, at total depth of 6500 feet flowed 8227 barrels in four hours through four-inch choke and against back pressure of 300 pounds. It made an estimated 36 million feet of gas per day. The same company's No. 1 Nunn, NE SE NE NW of the same section, made 11,000 barrels in four hours from Wilcox topped at 6323. This flow was against back pressure of 450 pounds.

On a partnership well with Anderson & Prichard, Phillips again scored in No. 1, Sandness community leases, in the center of the south half of the NE SE NW of 10-11-3. The Wilcox was found at 6316 feet and its base 6515 feet. The flow was 6932 barrels in four hours.

Empire Oil & Refining Co.'s No. 1 Refinery Site, SW SE NE NW of 3-11-3, found top of the Wilcox at 6312 and its base at 6452. It flowed 2054 barrels in 2 and 2/3 hours. Its flow was cut down by the 180 feet of screened pipe set on the bottom of the 5 and 3/16-inch flow string.

Indian Territory Illuminating Oil Co. came in with its No. 1 Terrace Lawn, in the center of the north fourth of the north fourth of the NE of 10-11-3, also in the north end of the field. The Wilcox here was found at 6273 feet and its base at 6330 feet. In the four-hour test the well made 6193 barrels. The Slick Estate's No. 1 Whitfield, center of the west half of the SW SE SE of 34-12-3, topped Wilcox at 6230 feet and in four hours recovered 7938 barrels.

Operations outside of this field and the Wewoka townsite field were without special significance. In the latter pool they proved no new territory, but some sizeable wells were completed. Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp., in their No. 4 Davis, NW SE & NW of 30-8-8, had Wilcox sand at 3970-81 feet and in 24 hours the well flowed 4407 barrels. Deep Rock Oil Corp.'s No. 4 Douglas (50 A.) SE SE NW of 30-8-8, was completed in Wilcox topped at 3930 feet and made 10,880 barrels in 24 hours. It was cutting 10 per cent.

This pool now has potential production of more than 70,000 barrels daily.

In the township west of the Allen field, Pontotoc county, Magnolia Petroleum Co. brought in one of those large gas wells which have shown up in this general area before. Its No. 1 "A" Reed, NW NW NE of 26-5-7E, at total depth of 2653 feet, was flowing wild an estimated 75 to 100 million feet of gas daily.

Kansas had little to contribute. The well of Muth Brothers in Rice county, some 10 miles northeast of the Raymond pool, swabbed 134 barrels of oil in 8½ hours from Siliceous lime at 3213-44 feet. The location is the NE corner of the NW of 21-19S-9W. The oil is 45.5° A. P. I. gravity. In normal times there would be a vast excitement over such a wildcat; as it is it is merely another well without a market.

Gov. "Alfalfa Bill" Murray, of Oklahoma, makes it known that while he will not permit the drinking of strong liquors in the capitol, as it is rumored has been done in the past, he does not wholly frown upon the illegal stuff.

"If a man will take a tablespoon of liquor in a glass of water at night and go to bed, he'll sleep better," said the governor. Certain members of the legislature are said to be heading a movement to compel manufacturers to build tablespoons on a much larger pattern.

* * *

W. H. Fulton, of Conrad, Wyo., is getting into the refining business. He has bought the Rainbow Oil & Refining Co., Great Falls, and will call it the Home Oil & Refining Co. The plant is a small one, 200 barrels capacity, but will be enlarged to 1000 barrels. Mr. Fulton is president of the Fulton Petroleum Corp., with production in northern Montana.

* * *

Wesley I. Nunn was recently appointed advertising manager for the Continental Oil Co., a position he held several years ago with the old Marland company. Mr. Nunn left the Continental company early in 1929, after he had spent four years with the Marland company as manager of the retail marketing department and later as manager of wholesale and export sales. He re-entered the Continental service last September and with the resignation of J. E. Moorehead he assumed charge of advertising.

* * *

Earle Porter, assistant general manager of the Amerada Petroleum Corp., reports that he ran out of gasoline one recent evening in Tulsa and that he was fully two blocks from any filling station. Here seems to be an opening for some enterprising oil company; a good site has been overlooked.

* * *

Current story: The minister was in the middle of a long prayer. "Oh Lord," said he, "bless especially the pure and the humble—". Whereat a drowsy brother in a rear pew yelped, "Hey, what about my Prairie and Texas?"

* * *

Will someone find a way to make a man leave his house when he doesn't want to and then tell the Phillips Petroleum Co. about it? The company has been held up in construction of its gasoline pipeline from the Panhandle district to St. Louis and the trouble is occurring near St. Louis.

Farm owners are demanding fabulous prices for right-of-way and under an ancient law of Missouri service in condemnation proceedings cannot be had so long as they remain in their houses. Three or four of them are said to have been penned up that way for weeks, with deputy sheriffs camping at the front door waiting for them to emerge.

* * *

M. H. Massey, formerly of the Independent Oil & Gas Co., is now resident auditor, Tulsa offices, for the Marathon Oil Co. He is at present doing his auditing verbally, as he was involved in a gas explosion recently and hasn't been able to get his fingers around a pencil since.

* * *

Died: In Wichita, Edmund P. Hayes, 52 years old, president of the Hayes Equipment Co. (filling station equipment makers.) His widow survives him.

Died: In Tulsa, Howard R. Farnsworth, 44 years old, petroleum engineer for the conservation branch of the U. S. Geological Survey. He was recently transferred from Taft, Calif., to Tulsa. He had been in the Taft district for seven years. A graduate of the University of Kansas, Mr. Farnsworth had been in federal service since 1907.

* * *

Ira Dugan, of the geological department of the Continental Oil Co., has been transferred temporarily from the Ponca City offices to the Texas division of the company.

* * *

Retail gasoline stations are being opened in Amarillo and vicinity by the Dixon Creek Oil & Refining Co., which is a consolidation of the Dixon Creek Oil Co. and the Cockrell-McIllroy Oil Co., both operating in the Texas Panhandle. S. D. McIllroy heads the new company with his brother, W. W. McIllroy and T. G. Nichols vice-presidents. George W. Pennington is secretary and treasurer. Hugh Allspaugh is general manager. The merged companies were closely allied since their beginning in 1926; the new corporation owns a 5000-barrel daily capacity refinery at Kings Mill, pipeline gathering system and producing properties.

* * *

Some help for the producers who have old tubing on hand is being offered by the United States forestry service, Denver. If legislation now pending becomes law, about 200,000 feet of 2½ and 3-inch tubing will be needed to make posts for the fence that will be erected around the forest reserve near Lawton, Okla.

Kettleman Hills Operators Association Starts with Protective Drilling

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, Feb. 20. ELECTION of William Reinhardt, vice president in charge of production for Shell Oil Co., as manager of the Kettleman North Dome Association, on Feb. 17 completed the organization attendant on the two-unit plan proposed for development of the area.

Steps were immediately initiated to protect proven acreage, in that portion of "the Hills" included in the plan, from drainage by one of the few operators who so far have refused to join the cooperative movement, which has been approved by the government as owner of considerable land in the area.

To this end, locations have been made for two new projects in the northwest end of the structure, on Sec. 28, 21-17. Sec. 28 is adjacent to the quarter section held by Superior Oil Co., in Sec. 29, where Huffman No. 1 continues to flow under a slight bean at a rate of approximately 11,000 barrels daily. Superior has not signed the agreement.

THE two new wells will be drilled on property held by Pacific Western Oil Co. in the north half of Sec. 28 and by Milham Exploration Co. in the south half. Standard of California and Union Oil Co. have offsets to Superior's Huffman 1 down to critical depths. Standard owns half and Union one quarter of Sec. 29, 21-17 in fee and may be expected to drill such additional offset wells as will be necessary to protect against drainage by the Huffman 1 and also its No. 2 which is now drilling.

Because of the unusually large daily yield obtained by the Huffman well, this particular portion of the north dome promises considerable activity during coming months. An activity that would undoubtedly have been modified had Superior joined in the development program.

In a similar manner, Sec. 35, 21-17 and the acreage surrounding it, threatens to be another "hot spot" from now on. On Sec. 35—fee land—there are three producing wells, two on property belonging to individuals who could not see their way to adopting the development plan.

STANDARD of California owns the west half with Petroleum Securities and Associated Oil Co. dividing the drilling privileges on the east half. The latter two companies lease from the recalcitrant property owners. On the adjacent Sec. 34, 21-17, Shell Oil Co. and North American Oil Co. are vieing with each other in an attempt to reach the pay first. North American has two wells, the Elsinore 1, bottomed at about 4800 feet and the Blauvelt 1 at about 6800 feet. Shell Oil Co. is below 7100 feet on the Dixon lease, offsetting Associated Oil Co.'s Whepley 1 Sec. 35.

All three of these wells are thought to have only an outside chance of obtaining commercial production and then only if they go to 8500 feet or better. The group of producers on Sec. 35 have indicated this. Petroleum Securities Co. recently completed the Felix 2 at 8100 feet, with over 1000 feet of penetration. This well is on Sec. 35, offsetting the Whepley lease and nearly half a mile upstructure from the Shell Dixon 1.

As an aid to going to these deeper horizons, North American is reported preparing to set a 7000-foot string of 13⅜-inch casing in its Blauvelt 1, which will permit a 10-inch hole to be carried into the oil sand.

With the increase in activity on the north dome, experts expect daily crude production to approximate 50,000 barrels by mid-summer, equivalent to 125,000 barrels of oil from the average California field.

Several other areas in the San Joaquin Valley also threaten California proration schedules. George F. Getty Inc. is reported below 3700 feet in a test of the Lost Hills field. The well is expected to be in a position for a production test within the next fortnight. This project should give a conclusive test of the potential offerings of the Temblor formation in the Lost Hills area. A recent test by Universal Consolidated Oil Co., in the southwest portion of the field, was unsuccessful in handling the heavy flow of water encountered at about 4700 feet.

THE Getty project is nearly 1200 feet higher structurally than the Universal well and, therefore, thought to have a much better chance of making an oil well. An offset to the Getty well is being rigged by General Petroleum Co.

To the south of the Lost Hills play in the North Belridge field, Ohio Oil Co. is reported as penetrating the Temblor pay at 5683 feet and is now coring ahead in oil sand at 5743 feet. From the standpoint of commercial production this well did not look any too good. From core showings it is apparently 740 feet lower on the structure than Belridge Oil Co.'s discovery well and over 115 feet lower than Richfield Oil Co.'s Belridge 1, a decided edge well, which failed to obtain commercial production, although drilled to below 6500 feet.

Other projects drilling at critical depths in the North Belridge play include two by Union Oil Co., one standing with a string of 9-inch pipe set at 4981 feet and the other drilling below 4500 feet. Belridge Oil Co., which controls nearly 70 per cent of the North Belridge district, has five drilling wells and has made a location to offset practically every other project started in the field.

Continental Oil Co. is preparing to start drilling on Result 2, Sec. 36, 27-21, approximately one mile southeast of the discovery well. The location for this well is thought to lie along the structural axis.

In the Coastal play, northwest from Santa Barbara, Prairie Oil and Gas Co. was drilling below 3000 feet in a well known as El Capitan 1, a test seeking a high gravity pay discovered by General Petroleum Corp. on its Erburu lease, nine miles north and west of Elwood. The discovery well continues to yield about 265 barrels of 42 gravity oil per day on the pump.

Prairie is also making progress in its test in search of an extension of the Ventura Avenue field. Its Sexton 1, one mile east of "the Avenue" field, is drilling below 8696 feet in sand and shale with some showings of gas but no oil.

At Playa del Rey, Union Oil Co. added another mediocre completion over the week. Townsite No. 5 was brought in at a rate of 500 barrels of 23.4 gravity oil from 5756 feet. The field had an aggregate total of 33,000 barrels daily over the week, nearly 13,000 barrels in excess of the prescribed allowable as set by the umpire.

Consideration of Embargo Postponed

(By Telegraph)

WASHINGTON, Feb. 24.—The House committee on ways and means Monday adopted a resolution saying there was not time in the remainder of the present session of Congress for consideration of tariff and embargo bills and that consideration of all such bills be postponed. However, this does not prevent either the House or Senate from putting an embargo on petroleum and its products as a rider in any of the appropriation bills still unacted upon.

California Conservation Law To Be Modified

LOS ANGELES, Feb. 20

MODIFICATION of California's gas conservation law is expected at the next session of the state legislature which reconvenes at Sacramento, Feb. 24.

It is still a question of debate as to whether these changes will take the form of an entirely new law or an amendment to the 1929 act.

After being declared constitutional by the State Supreme Court of Appeals in two separate decisions, the present law is still wending its way through other legal complications introduced by operators in the Santa Fe Springs field to guard against damages to their properties through enforcement of the statute.

While the law has never completely measured up to the standards advanced by those oil executives who saw in it a means of curtailing production, it is believed to have considerable merit as a conservation measure.

Another important factor that has entered into the need for a more explicit and workable conservation law is the abnormally low gas-to-oil ratios obtained in two recent completions in the Kettleman Hills. This field has been the chief consideration of advocates of the law because ratios ranged between 25,000 and 40,000 cubic feet of gas per barrel of oil. Early completions bottomed in the extremely high gravity gas zone produced a large volume of gas in proportion to the oil output.

Two recent completions, one by Superior Oil Co. and one by Petroleum Securities Co., bottomed below 8000 feet with over 1200 feet of penetration each, are now producing 11,000 and 5300 barrels of oil, and 23,000,000 and 5,500,000 cubic feet of gas daily, respectively. Even the poorer of these two projects from a gas conservation standpoint has a gas-to-oil ratio of less than 2200 cubic feet per barrel of oil.

With such ratios the law as it now stands cannot attempt to dictate the curtailment of crude oil production from the Kettleman Hills as had been hoped by its sponsors. Other wells in this area are now being drilled on fee acreage by operators who are opposed to the unit plan of development recently completed and adopted for over 90 per cent of the proven acreage.

At the coming session of the legislature, Senator Sharkey will offer a bill that reads:

"An act to prohibit the production of crude petroleum so as to constitute waste; to define waste; to provide for a determination of waste and the allocation of production to the several sources of supply and the several properties therein and to provide penalties for violation of said law.

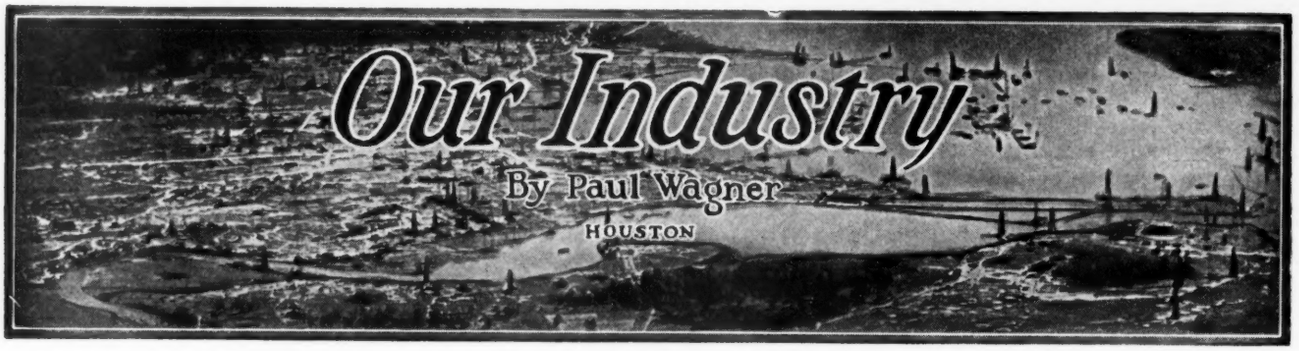
"The people of the State of California do enact as follows:

"Section 1—That the production of crude petroleum in the state in such a manner as to constitute waste is prohibited.

"Section 2—That the term 'waste' as used herein, in, addition to its ordinary meaning, shall include economic waste, underground waste, and waste incident to the production of crude petroleum in excess of transportation or marketing facilities or reasonable market demands."

Experts believe this and a second bill to be introduced by the same state senator will bear considerable modification before it would be acceptable to the industry. The other bill, —Senate 364—provides for the present gas law to be amended by abolishing the provisions on the gas-oil-ratio—a moot point in any discussion relative to enforcement of the law.

Another bill to be introduced would prohibit townlot drilling by providing that no well shall be drilled within 100 feet of the other boundary line of the property on which it is located, or within 100 feet of any public street or highway, or within 150 feet of another producing well. Independent operators are bitterly opposed to this form of legislation.



W. T. DINKINS, in general charge of the Sinclair Refining Co's. southwestern marketing division at Forth Worth, has been identified with that corporation for upward of 12 years. Originally joining the Sinclair organization at Chicago he was afterwards appointed manager of marketing territory west of the Mississippi. Thereafter, he was transferred to New York, from which headquarters he pioneered eastern territory.

Before joining Sinclair, Mr. Dinkins was identified with the Pierce Oil Co., both at St. Louis headquarters and in Mexico. He also gained an enviable record in the World war, from which he emerged with the title of Major.

Mr. Dinkins took charge at Fort Worth several months ago, after the Sinclair interests had taken over the Pierce Oil Corp. properties in the southwest and had decided to expand their marketing organization.

* * *

Reports from Tampico indicate R. H. Ames will return there as field manager for the Mexican Eagle Oil Co., Ltd., (El Aguila) after two years spent in a similar capacity in the Isthmus of Tehauntepec region, with headquarters at Puerto Mexico. Mr. Ames recently returned to Mexico after a vacation spent in the United States.

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R. C. Cooke is superintendent of the 2500-Barrel skimming plant under construction at Norsworthy, on the Houston ship channel, by the American Petroleum Co. of Texas, of the J. S. Cullinan group. W. W. Moore is president and Craig S. Cullinan, son of J. S. Cullinan, is in charge of operations. The American Petroleum Co. operates a 70-mile pipeline from the Hull field in Liberty county, Gulf Coastal territory, to Norsworthy.

* * *

Leo Fleishman, Jr., of the sales department of The Texas Co. of Mexico, S. A., has been transferred from Monterrey to Mexico City.

* * *

D. S. McManus is now manager of the southwest Louisiana division of the United Gas Distribution Co., a unit of the United Gas System, it is announced by J. V. Strange, vice president. Mr. McManus had been for six years superintendent of gas, water and buses for the Gulf States Utilities Co., and the Louisiana Electric Co., at Lake Charles. Under jurisdiction of Mr. McManus will come management of a new system running 158 miles east from Kirbyville, Texas, to Franklin, La., serving 40 towns and cities and including 265.5 miles of lateral lines. The new system is being constructed by United Pipe Line Corp., also a United Gas System unit.

W. T. Dinkins

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William J. Nolte of the Stanolind Oil & Gas Co., is the new president of the North Texas Geological Society at Wichita Falls. Other officers are H. F. Smiley of the Deep Well Developing Co., vice president, and Virgil Pettigrew of the Humble Oil & Refining Co., secretary-treasurer.

* * *

R. E. Gile is now connected with the San Angelo offices of the Superior Oil Co. of California for West Texas territory. He was formerly with the Independent Oil & Gas Co., at Tulsa.

* * *

Jack Powers of the Ingenerios y Contratistas Martin, S. A., has returned to Tampico from Maracaibo and will go to Mexico City for construction work on steel storage tanks to be erected at the new interior refinery of the Mexican Eagle Oil Co., Ltd., (El Aguila) of the Royal Dutch-Shell group.

* * *

George G. McCarthy of the Pure Oil Co.'s engineering department at Houston has returned to work in the Gulf Coastal district after two months of illness.

* * *

Henry Bacon has succeeded Carl Egner, resigned, as head of the Pure Oil Co.'s material department.

Shipments of Drilling Equipment Clog East Texas Railroad Facilities

By Paul Wagner

N. P. N. STAFF WRITER

HOUSTON, Feb. 20

MEASURES approximating an embargo against incoming shipments of oil field machinery are in effect on the International-Great Northern (Missouri Pacific) railroad at Longview, reflecting congested conditions in the Gregg-Rusk development area of East Texas.

Terminal facilities of the Texas & Pacific at Longview are also reported taxed to the limit, although no embargo has been announced and it is said none is contemplated.

Railroad sidings are packed on the Missouri Pacific branch line serving the Kilgore and Henderson areas of Rusk county, where unloading of equipment has been slowed down by weather conditions and in some instances by failure of shippers to pay freight on their consignments.

"All the bankrupt owners of drilling machinery in the country have shipped equipment into the East Texas territory," according to one informed observer, who adds that "now their outfits are there they don't know how to pay the freight."

Outgoing shipments of crude oil marketed in tank cars, this week approximating 25,000 barrels daily, also serve to clog railroad facilities at field points. When shipments reach Longview this handicap is lessened, as there the Missouri Pacific system from South Texas to St. Louis and the Texas & Pacific between New Orleans and El Paso are both trunk line railroads.

Tank car shipments of crude originate mainly on the Missouri Pacific lines, amounting this week to upwards of 3500 barrels daily by the Petroleum Marketing Co.; 8500 barrels by the Panola County Pipe Line Co.; 8400 barrels by Inland Waterways Pipe Line Co.; and 2750 barrels by the Rusk County Pipe Line Co., all maintaining field systems connecting with loading racks in the Henderson, or Joiner, development area.

Shipments now originating on the Texas & Pacific are confined to tank car quantities loaded west of Longview at facilities connected with the Farrell-Moncrief & Arkansas Fuel Oil Co. discovery well of Gregg county. On opening, Feb. 17, that well made 11,258 barrels daily through three flow lines, oil temperature 120 F., at the well and 88 degrees in the tanks.

RUSK county production was brought to a daily level of nearly 26,000 barrels by the current completion of the Ball & Malone well, in the southwestern part of the Joiner area, for 1130 barrels initial production in 12 hours.

Altogether there are now close to 50 active tests in the Joiner and Kilgore areas, nine miles apart, in northwestern Rusk county. An additional 35 proposed tests consist of derricks under construction and rigging up operations. Locations reported, on which no work has been done, total another twenty.

In Gregg county, stimulated by the Farrell-Moncrief & Arkansas Fuel Oil Co., discovery, there are five active tests; 15 derricks and rigs; and scattered locations.

The two counties, therefore, account for approximately 55 active tests, 50 derricks and rigs and probably 25 locations, some of which may not be drilled but will be offset in numbers by others as development proceeds.

Approximately 25 of the Rusk tests, counting all in the various stages from locations to drilling wells, are in the Kilgore area, where Humble Oil & Refining Co. bought out the Ed. W. Bateman discovery well and roundly 1500 acres of leaseholds surrounding it. They are within a mile radius of the Humble well. Others are in the earlier Joiner area, northwest of Henderson.

Average initial productions of the 25 tests so far completed in the Gregg-Rusk district have been approximately 2000 barrels per well per day, weighting the original small wells in the eastern part of the Joiner district with the maximums of the Kilgore discovery at 22,000 barrels and the Gregg (Longview) discovery at 17,000 barrels, estimated.

Despite the fairly rapid declines of Joiner area exploited wells and the relatively low reservoir pressures that are calculated to bring short flowing life to completions in the East Texas region there remains the probability that the Gregg-Rusk district soon may reach, or exceed, 100,000 barrels daily, potential production.

PRORATION measures continue to be held in abeyance and the failure of either the Arkansas Fuel Oil Co., or the Humble Oil & Refining Co., to provide trunk pipeline outlets for the territory may mean that crude shipments must be confined to tank car quantities for some time to come.

A proposed 70-mile pipeline to Shreveport district refineries of the affiliated Louisiana Oil Refining Corp., for which a sur-

vey was made by the Arkansas Fuel Oil Co., from the Gregg discovery well, may not be built it is now learned.

The Arkansas Fuel Oil Co. can make one line shipments direct from its loading rack on the Texas & Pacific railroad, west of Longview, to Shreveport, for seven cents a hundredweight; and may wish to avoid becoming a common purchaser in the East Texas territory by not building trunk pipeline facilities.

Another short gathering system for Rusk county is announced by L. G. Welsh, Trustee, operating as the Central Pipe Line Co., which has completed survey for eight miles of six-inch line from the Joiner area to the International-Great Northern main line at Overton. A 25-car loading rack is to be built, along with working storage of 55,000 barrels.

It is reported that in addition to making railroad shipments to the Gulf Coast for reshipment on ocean-going tanker contracts, the Central Pipe Line Co. will supply crude to skimming plant refineries proposed for construction at Overton.

38 Per Cent Gasoline In Gregg Crude

HOUSTON, Feb. 19

LABORATORY tests of crude oil from the Gregg county area of East Texas show recovery of 38% gasoline testing 57.5 degrees, A. P. I. gravity, initial boiling point of 119 degrees and end point of 435 degrees.

An accompanying test sheet shows results obtained on a five-gallon sample from the Moncrief-Farrell & Arkansas Fuel Oil Co., No. 1 Lathrop discovery well, northwest of Longview, crude from which tested 40.1 degrees A. P. I. gravity, olive green in color.

In the test mentioned the kerosine and gas oil cuts were run together to get 42.6 per cent recovery of 32.1 A. P. I. gravity gas oil. Tests[1] of Rusk county crudes, from the same general district, showed 10 to 15 per cent kerosine recovery with 33 to 36 per cent gasoline of 58.5 gravity, initial boiling point 122 degrees F., and end point 420 degrees. In one Rusk county test on crude from two wells, the gas oil recovery was 29.5 per cent running to 20 per cent bottoms and on another test 16 per cent running to 23 per cent distillate and 12 per cent bottoms.

Procedure on the Gregg crude test distillation was the charging of a two-liter flask equipped with Hempel column, 1½ inches by 14 inches, with one-fourth inch lengths of glass tubing; a distillation rate of 10 cubic centimeters a minute being maintained. After recovery of the gasoline the column was removed and the remainder of the distillation made under absolute pressure of from 40 to nine mm of Hg.

Detailed distillation data are given in the accompanying table.

[1]National Petroleum News, page 34, Feb. 4, 1931.

East Texas Well Tests 4550 Barrels

(By Telegraph)

HOUSTON, Feb. 23.—The Edwin M. Jones and the Houston Oil Co. of Texas partnership tested 4550 barrels daily through three-quarter inch choker, Feb. 22, in their No. 1 Crum well, located a half mile south of the Bateman discovery of the Kilgore area in northwestern Rusk county, Texas, which now belongs to the Humble Oil & Refining Co.

Production from the new well will be handled by the Houston Oil Co. through field lines to loading rack on the International Great Northern railroad for shipment to its Camden, Ark. refinery.

Distillation Test on Crude from the Moncrief-Farrell & Arkansas Fuel Oil Co. No. 1 Lathrop Discovery Well in Gregg County

DISTILLATION:

Per Cent of Crude	Vapor Temp.	Oil Temp.	Grav.	Grav.
I. B. P.	76			
5%	152			
10	198			
15	232			
20	268			
25	308			
30	350			
35	404			
38.0	430		57.5	57.5
Vacuum here				
(2.5) (Added to next cut)			(39.1)	
43.0		400	38.7	
48.0		440	37.2	
53.0		485	35.7	
58.0		532	34.1	
63.0		582	31.8	
68.0		625	29.9	
73.0		680	27.7	
78.0		732	Too much	
80.6		750	Wax	32.1
17.6 Residuum				14.8
1.8 Loss				

Gasoline	
Grav.	57.5
Odor	Good
Doctor	Nearly Sweet
% Sulfur	.02
Corrosion	Neg.
Color	+30
I. B. P.	119
10%	168
20	198
30	220
40	242
50	268
60	288
70	316
80	346
90	380
End Point	435
Recovery %	97.5

RECAPITULATION:

Crude
Gravity 40.1 A. P. I.
Color Olive Green
Odor Good
% BS&W 2.2 (Wax) No water
% Sulfur 0.218
Pour Point Below 45

0.0% Kerosine (See text)
Gravity 41.1 A. P. I.

42.6% Gas Oil
Gravity 32.1 A. P. I.
Pour Point 80 F.
% Sulfur 0.228

60.2% Reduced crude (—38% gasoline and 1.8% Loss)
Gravity 27.3 A. P. I.
Flash C. O. C. 265
Fire C. O. C. 295
S. F. V. @ 122 16
Pour Point 80

17.6% Residuum
Gravity 14.8 A. P. I.
% Sulfur 0.652
Flash 595
Fire 675
S. F. V. @ 122—2495
1.8% Loss

38.0% Gasoline
Gravity 57.5 A. P. I.
Color—Odor Good
Doctor Nearly Sweet
Corrosion Neg
% Sulfur 0.02
I. B. P. 119—End Point 435

Automatic Gas Station Successful In Supplying Shawnee Needs

SHAWNEE, Feb. 1

FUNCTIONING automatically, the Oklahoma Natural Gas Corporation's distributing plant is supplying gas to the city of Shawnee without a guiding hand of any sort from man. Almost ghost-like in its quiet efficiency, the plant increases and decreases the gas supplied to the city mains as the demand varies throughout the day.

Beginning with the extra gas called for by the early risers as they start to heat their houses and to prepare breakfast, down through to the time in the evening when the manually controlled station shuts down and the attendant goes off duty, the automatic station regulates the supply of gas entering the city mains to meet the demands of the consumers as they vary throughout the day.

Two small steel buildings, set on concrete foundations house the plant. One of the buildings contains the reducer which receives the gas from the field gathering lines. The other contains the reducers and control instruments that admit the gas to the city mains.

Field gas is admitted to the first pressure reducer at about 300 pounds per square inch. This pressure is reduced to 140 pounds, at which it is admitted to the distributing plant for further reduction and control. It comes into the main plant through a header buried under the building floor, and is put through another set of regulators that bring the pressure down to around 29 pounds.

To operate the control instruments a small line takes off a stream of gas from the high pressure header in the main plant. This line feeds through a small regulator, which cuts the pressure to the instrument to 35 pounds per square inch. The gas passes through a needle valve, and past an outlet valve.

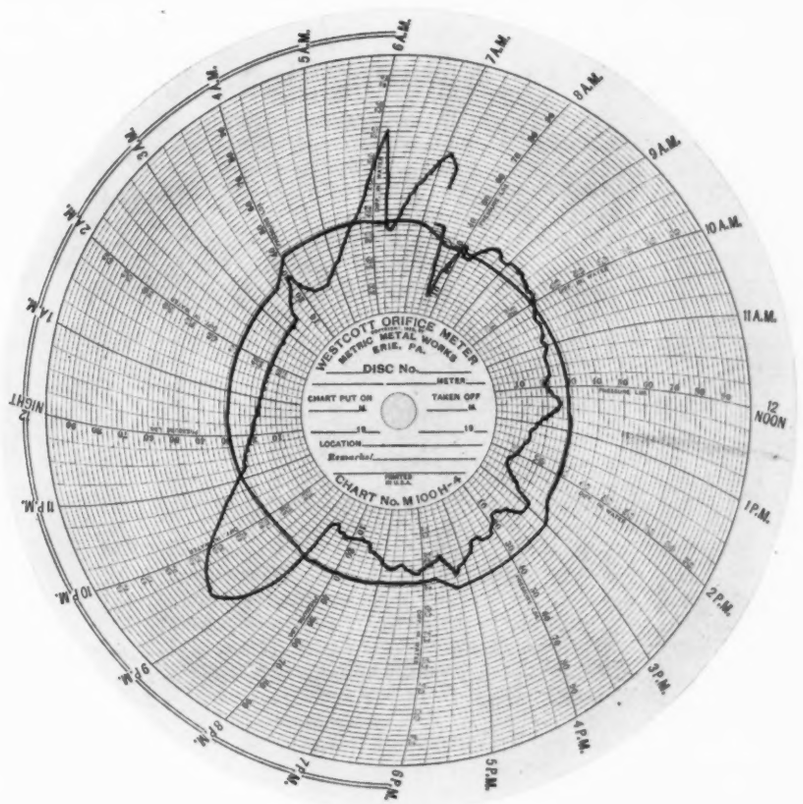
Another line brings gas from the low side of the header to a diaphragm which controls the needle valve. A reduction of pressure on the low side of the header will open the diaphragm which in turn controls the needle valve through which the gas from the high side-fed line is passing.

A line from the needle valve carries the gas pressure to the diaphragm controlling the passage of gas from the high side of the intake header to the low side, which feeds the mains. A reduction of pressure on the low side means that a drain is being placed on the supply, demand having increased for one cause or another.

To take care of the regular increases in demand which occur at the same time throughout each day, a time cam controls a needle valve located between the needle valve and the diaphragm on the control lines. At the proper intervals, this time cam functions, increasing and decreasing the supply of gas admitted to the city mains.

An interesting commentary on the daily life of the community is to be afforded by a study of the volume and pressure charts kept at the plant. Through the night there is a comparatively small demand for gas. From midnight until just before four A.M. there is little change to be noticed on the volume line. At about four o'clock, however, there is a decided hump in the line, occasioned perhaps by the starting up of the Little Giant Genuine Home Baking Pie Foundry. About 4:30 a.m. the demand starts to show a steady increase, as the shop workers get up, restaurants prepare for early breakfasters, and so on.

This demand continues to six o'clock, when the early



Typical chart taken from the automatic gas station at Shawnee. The jagged outer line indicates gas volumes sent through the city mains. The smoother inner line represents pressures. Its outline follows the shape of the time cam which operates automatically

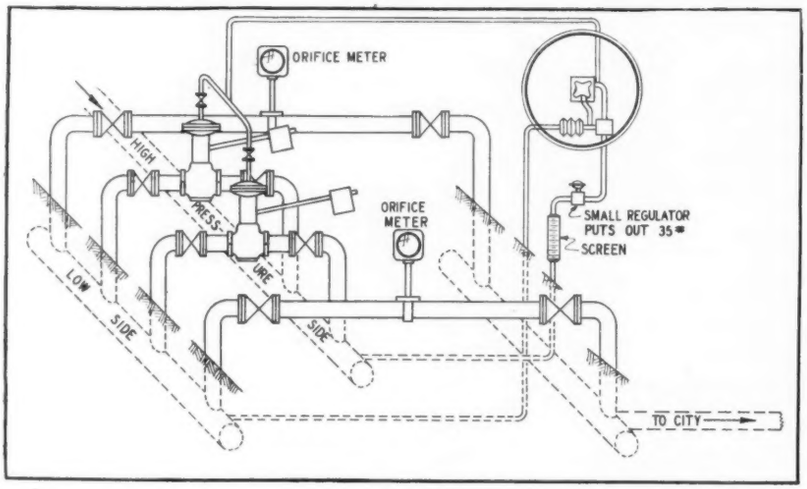


Diagram of the layout of the automatic gas distributing plant at Shawnee, Okla.

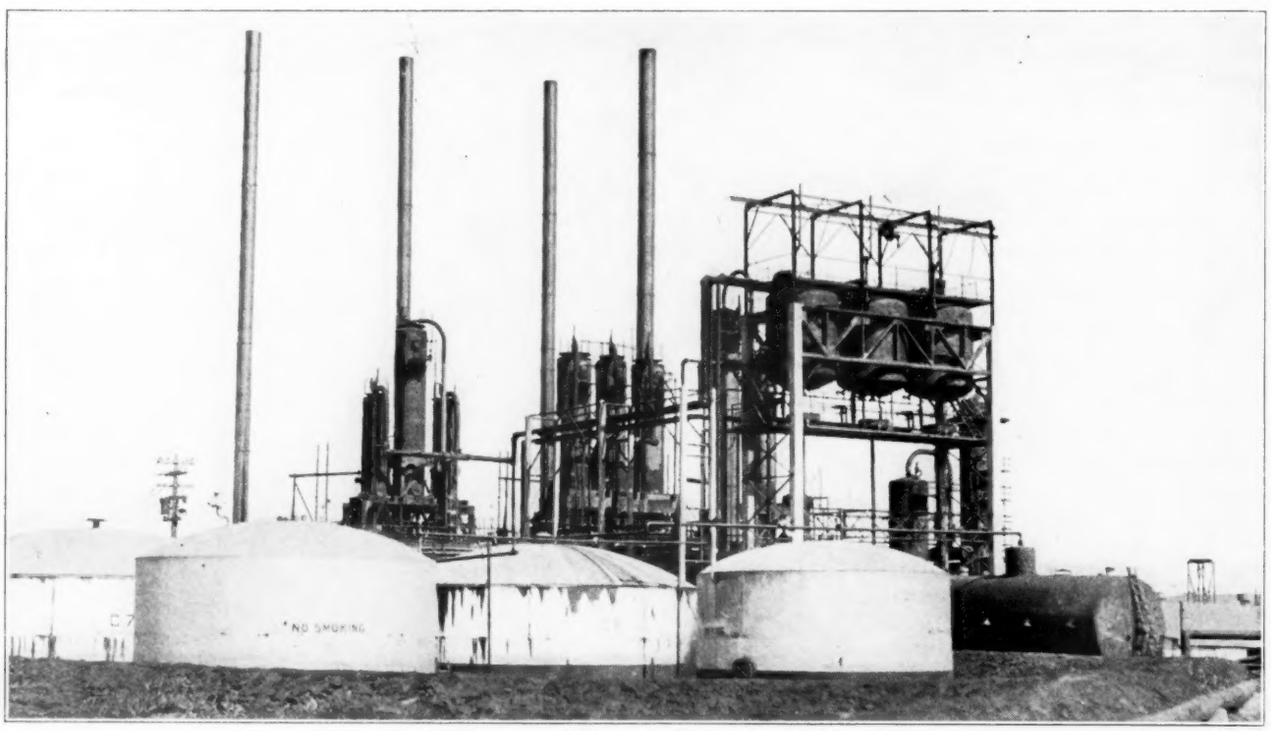
birds are up and about, and on their way to work. The demand falls off until the office workers, and general householders start their day. This increase is noticed until after seven o'clock, when the demand takes a sharp drop. Part of the drop on the charts of the automatic plant is occasioned by the coming on of the auxiliary plant, which is manually controlled.

The volume line follows the day's activities as accurately as a camera. There is little change throughout the morning until noon time, when the preparing of the noon meal brings a need for more gas. After noon, until about 2:30 p.m. there is a decline in the volume. At the latter time an increase is shown, occasioned no doubt by the need for more heat in the houses as the day begins to draw to a close.

The volume line of gas passing through the automatic station from supper time on until 9:30 p.m. shows only the ordinary variations caused by the preparation of the evening meal, and the additional heating fires that are lighted. At 9:30 the auxiliary station goes off, and the full burden of supplying gas to the town is taken up by the automatic station.

In operation about four months, the automatic station has so far given entirely satisfactory service, according to F. M. Orelup, superintendent. Pressure recording charts on the mains can be read in the gas company's town office, thus providing an easy check on the continued operation of the station. Any unusual condition recorded on the charts would indicate something out of order at the station, and would bring attention at once.

Kanotex Refining Co. Plant at Arkansas City



Two Jenkins units and one Winkler-Koch unit are employed

Conditioning Refinery Water

Boiler Feed Water; Loss of Heating Efficiency Due to Scale; Removal of Scale Forming Materials; Foaming and Priming; Embrittlement Prevention; Zeolite Treating; Chemistry of Process; Operating Precautions

By Sidney Born*

Part 3

THE subject of boiler feed water is a very important one to refinery operations, as the average refinery uses large quantities of steam for process as well as power purposes. The tendency is also to generate high pressure steam and use steam driven extraction turbines to generate electricity, using the low pressure steam from the turbine for various process purposes. The use of high pressure boilers necessitates very careful control of feed water characteristics.

The characteristics that are most desired in boiler feed water are as follows:

1. Freedom from suspended matter. The boiler feed water should be clear, that is, free from silt, mud, or other suspended matter.
2. A good boiler water should be free from scale forming materials.
3. Boiler feed water should be free from corrosive substances.
4. Boiler feed water should not contain excessive amounts of dissolved solids.
5. Boiler feed water should have a low oxygen content.
6. Boiler feed water should have a sulfate carbonate ratio as follows: For 150 pounds pressure, 1 to 1. For 200 pounds working pressure, 2 to 1. For 250 pounds and higher, 3 to 1.

When impure water is used for boiler feed water, it results in scale formation, priming or foaming. Scale formation not only lowers the capacity and efficiency of a boiler, but also necessitates a larger plant investment to supply additional boilers to replace those down for cleaning.

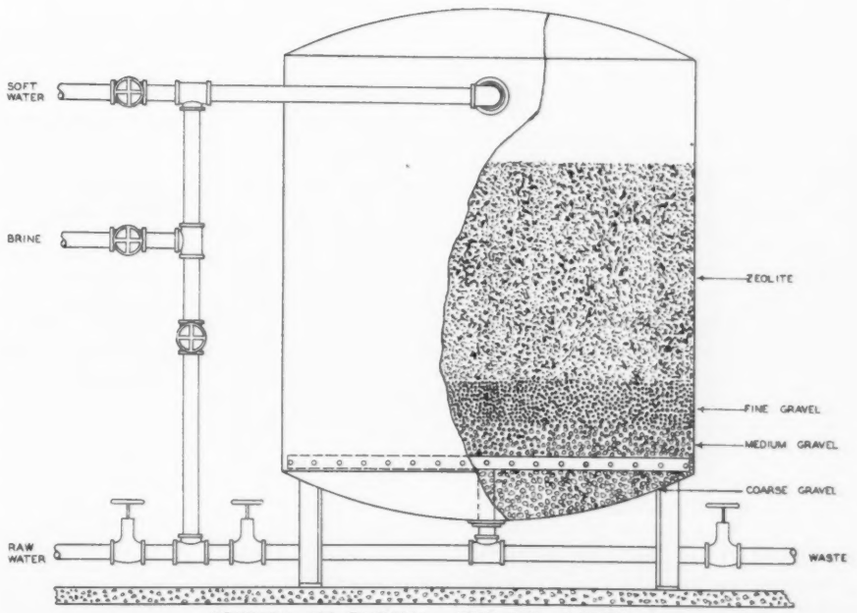
No general set of figures can be given that would accurately represent such a condition. Each plant is a problem in itself and figures applicable to any particular condition must be worked out for that particular condition. To give an idea, however, of the amount of scale that may be deposited under such conditions, we give herewith table "A" which shows the amount of scale formation that might be expected from a 150 H.P. boiler operating under normal load with waters containing from 5 to 25 grains per gallon of incrusting solids. No allowance is made in these figures for removal by blow-off.

When scale is allowed to accumulate on the tubes and sheets of a boiler, not only is there a loss in efficency and capacity, but unless the boilers are taken down for cleaning at

Table «A»

Amount of Scale Formed in 150 H.P. Boiler Operating at 100% Rating

Hardness Grains	1 Day Pounds	7 Days Pounds	14 Days Pounds	30 Days Pounds
5	10	74	144	319
10	21	144	297	638
15	31	223	446	957
20	42	297	595	1,276
25	53	372	744	1,596



SECTION OF TYPICAL ZEOLITE SOFTENER

*Marathon Oil Co.

Table «B»

Loss in Fuel Efficiency Due to Boiler Scale

Character of Scale	Thickness	Composition	Loss of Efficiency Per cent
Hard	1/50″	Mostly Carbonate	9.4
Soft	1/23″	Mostly Carbonate	7.2
Hard	1/32″	Mostly Carbonate	8.5
Soft	1/25″	Mostly Carbonate	8.0
Hard	1/25″	Mostly Sulfate	9.3
Hard	1/20″	Mostly Sulfate	11.1
Soft	1/16″	Mostly Sulfate	10.8
Soft	1/16″	Mostly Carbonate	11.0
Soft	1/16″	Mostly Carbonate	12.4
Hard	1/16″	Mostly Carbonate	12.6
Soft	1/11″	Mostly Carbonate	15.0
Hard	1/8″	Mostly Sulfate	15.9

frequent intervals, scale formation may result in burned out tubes and sheets which necessitate expensive repairs and replacements.

While it is difficult to determine the exact loss in fuel efficiency due to deposits of boiler scale, Table B taken from the University of Illinois Experiment Station Bulletin No. 11, gives an adequate representation of what these losses may be.

Table C gives a list of those substances most frequently found in natural waters used for boiler feed purposes, together with their action in the boiler and a method for treating or removing each type of impurity.

This table is intended merely as a general outline of the methods applicable for the removal of the various substances which are apt to be found in boiler feed waters. A detailed discussion of each method will be found later on in this article.

Foaming and Priming

There has always been considerable confusion in the use of foaming and priming but the general tendency today seems to be to define foaming as the continuous evolution of a froth on the surface of the water in the boiler, resulting in carrying over water with the steam, whereas priming is generally defined as a sudden evolution of steam and water from a boiler.

If we accept this definition, then priming can be controlled by proper boiler construction and operation. Priming may be caused by suddenly opening steam valves, causing a sudden drop in pressure or sudden changes of water level and other operating conditions.

Foaming on the other hand is caused primarily by the character of the water fed to the boilers, and in the present article this is the subject we are most interested in.

A great deal of research and experimental work has been carried out to determine the effect of various substances in their relationship to this question. The general result of these investigations indicates that in the absence of any suspended matter, high concentrations of soluble material were necessary to produce foam.

Concentrations as high as one thousand grains per gallon of soluble salts can be used without danger of foaming, provided that the water is perfectly clear. If the water contains suspended matter, then even a moderate amount of soluble salts will cause foaming.

Insoluble materials and soluble salts have a definite relationship in the matter of foam production. Foulk* has very concisely summarized the results of part of his investigation in the following paragraph:

"Increasing the amount of insoluble material had the same effect as an increase in the concentration of the soluble salts. The one could therefore take the place of the other so that foams could be produced with a small amount of soluble material provided a large amount of insoluble solid was present, and vice versa. There was, however, a lower limit at about 500 ppm. for both soluble and insoluble material, that is, if the soluble salts were much less than this no reasonable amount of insoluble material would produce foam, and if less than this amount of insoluble matter was present no concentration of soluble salts was sufficient to make the liquid foam."

The above work emphasizes the need for a perfectly clear boiler feed water, that is, the water must not only be clear when it reaches the boiler, but it must be so treated that no further materials will be precipitated or suspended in the boiler. If this condition is fulfilled then no trouble need be experienced with foaming even though high concentrations of soluble salts are present.

*Ohio Geological Survey Bulletin.

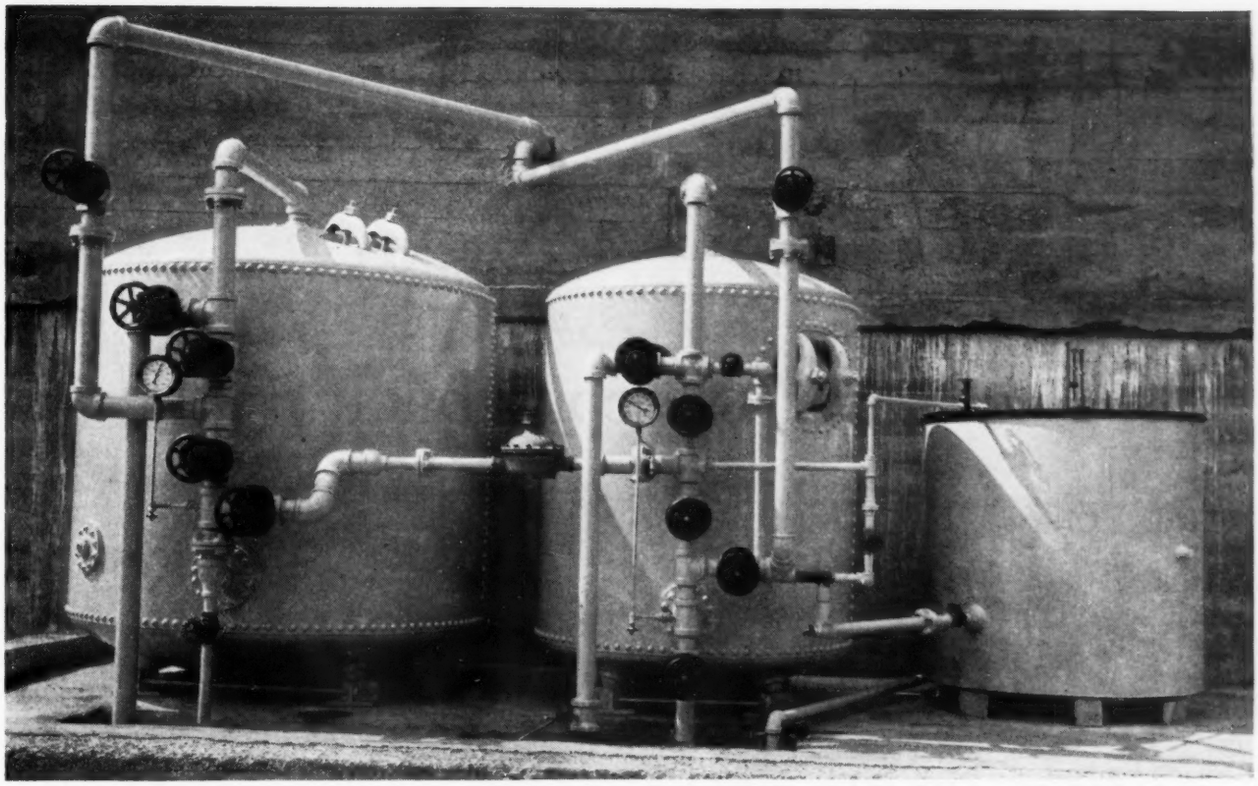
Embrittlement of Boiler Steel

Caustic embrittlement of boiler steel is differentiated from cracking due to other causes such as those due to corrosion or fatigue. Embrit-

Table «C»

Impurities present in natural water used for boiler feed purposes

Impurity	Effect	Remedy
Suspended Matter	Foaming, sludge, scale	Settling, filtration with or without coagulants.
Calcium and Magnesium Bicarbonates	Scale	Lime treatment or zeolite.
Calcium sulfate	Scale	Sodium carbonate or zeolite.
Calcium Chloride	Scale	Sodium carbonate or zeolite.
Sodium Carbonate and Bicarbonate	Foaming—Embrittlement	Chemical treatment to correct sulfate—carbonate ratio.
Magnesium Sulfate	Corrosion	Lime and sodium carbonate or zeolite.
Magnesium Chloride		
Mineral Acid	Corrosion	Neutralization.
Carbonic Acid (CO_2)	Corrosion	Deaeration—feed water heater.
Oxygen	Corrosion	Deaeration—feed water heater.
Grease and Oil	Foaming—deposit film	Separation and filtration.
Organic Matter	Foaming—Corrosion	Filtration with coagulants.



Zeolite installation with sand filter at left for removal of suspended matter. Courtesy The Permutit Co.

tlement cracks always occur below the water line, are irregular in direction and location, usually occur at rivets or where plates are joined together. The metal around these cracks is usually brittle.

While at first there was some doubt as to the cause of this type of failure, it has now been clearly established that failures of this type are due to the action of caustic soda (Sodium hydroxide) on the boiler metal.

Caustic soda in feed water may be due to excessive amounts of sodium hydroxide used for feed water conditioning or more usually by conversion of sodium carbonate to hydroxide.

$$Na_2CO_3 + H_2O = 2NaOH + CO_2$$

It has been found that the presence of sodium sulfate effectually prevents caustic embrittlement, and where excessive amounts of sodium carbonate are present it is necessary to convert the carbonate to sulfate by a treatment with sulfuric acids.

$$Na_2CO_3 + H_2SO_4 = Na_2SO_4 + H_2O + CO_2$$

It is recommended that the following ratios be observed.

	Sodium Sulfate		Sodium Carbonate
For 150 lb. pressure	1	:	1
For 200 lb. pressure	2	:	1
For 250 lb. pressure	3	:	1

In case of waters which already contain appreciable amounts of sodium bicarbonate in addition to calcium and magnesium bicarbonates, and where the sulfate content is small, a mixture of calcium hydroxide and calcium sulfate may be used to correct this condition.

Under these conditions the calcium hydroxide will precipitate the calcium and magnesium bicarbonates as carbonates and will change the sodium bicarbonate to sodium carbonate. The sodium carbonate thus formed will then react with the calcium sulfate to form calcium carbonate which is insoluble and precipitates in the softener, and an equivalent amount of sodium sulfate is left in the feed water.

The maintenance of the correct sulfate-carbonate ratios is sometimes very difficult or expensive. It has been shown that other substances, particularly sodium phosphate, are very efficient in preventing embrittlement. It is stated that disodium phosphate is about 500 times as effective as sodium sulfate.

The introduction of disodium phosphate can be very economically and easily handled and at the same time not appreciably increase the total solids in the boiler water. (For further details of phosphate treatment see paper by Joseph D. Yoder, Journal of Industrial and Engineering Chemistry, Vol. 21, p. 830 (Sept. 1929))

If sodium phosphate is used it should always be added after the water has been properly softened. If the sodium phosphate were added simultaneously with the calcium hydroxide and sodium carbonate, the phosphate would react with the calcium and magnesium salts present in the raw water before the carbonate could react with same and no excess phosphate would be left in the feed water. Therefore when adding phosphate to prevent embrittlement conditions in the boiler, it is necessary to add the phosphate after the water has been completely softened.

The concentration of phosphate in the boiler blow down should be checked at frequent intervals, at least once a day. Excessive amounts of phosphate increase operating costs.

There are no known methods of predicting accurately that embrittlement will occur. All that can be determined is that conditions are favorable for the formation of embrittlement and under such conditions preventive measure should

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be taken, as by the time any definite evidence of embrittlement is found it is too late to apply corrective measures. As embrittlement is more apt to occur in high pressure boilers (above 300 pounds) every precaution should be taken to properly condition the feed water.

Zeolite Treatment

Minerals known as zeolites, which are hydrated sodium aluminum silicates, have the property of exchanging sodium with calcium or magnesium. The peculiar properties of these substances were first noticed by J. T. Way about 1850 in the course of some researches on fertilizers, but it was not until about 1900 that the possibilities of these substances for water softening were understood. The early zeolites were made by fusion of various raw materials containing silicates, and while they were slow acting and of low capacity, their action was generally satisfactory.

Sometime after this, beds of natural zeolites with vastly improved capacities and activities were found, and almost simultaneously new raw materials and improved manufacturing methods developed synthetic zeolites of greatly improved properties.

When water containing calcium or magnesium salts is passed through a bed of zeolite, the calcium and magnesium are removed and sodium takes its place. Depending on the concentration of calcium and magnesium salts and the quantity of water passed through a certain amount of zeolite, the zeolite will become exhausted and it is then necessary to regenerate it. This can be done very easily by reversing the process and passing a solution of common salt, that is, sodium chloride, through the zeolite. .

The chemical reaction taking place between calcium bicarbonate and zeolite is illustrated herewith.

$$Ca(HCO_3)_2 + Na_2O \cdot Al_2O_3 \cdot 2SiO_2 \cdot 6H_2O = 2NaHCO_3 + CaO \cdot Al_2O_3 \cdot 2SiO_2 \cdot 6H_2O.$$

If the water to be treated contains large amounts of calcium or magnesium carbonates or bicarbonates, the zeolite treated water will carry equivalent quantities of sodium carbonate or bicarbonate, and it is preferable to give such waters a preliminary treatment with lime to remove the carbonates and then follow this up with zeolite treatment to remove permanent hardness.

If zeolite treated water contains excessive amounts of sodium bicarbonate or carbonate, a treatment with sulfuric acid can be applied as a corrective measure. By this treatment a portion of the carbonate is changed to sulfate. Such an acid treatment must be very carefully controlled to avoid adding an excess of acid which would result in serious corrosion.

As zeolite treated waters are softened practically to zero hardness and there are no calcium or magnesium salts left in the water, it is very important to deaerate such waters by passage through a suitable heater. If zeolite treated waters are not deaerated the dissolved oxygen will cause serious corrosion in boilers and distributing system, especially as the boiler tubes and sheets will have no protective coating of calcium or magnesium salts.

A zeolite softener consists essentially of a steel shell, equipped with a pipe spider in the bottom to act as a collecting and distributing manifold, several layers of graded gravel totaling about one foot in thickness and a bed of zeolite mineral. A suitable manifold with the necessary valves to properly pass through the hard water and to permit of backwashing and the other operations of brining connected with the regeneration cycle should be furnished with the softener.

The size of equipment required is based on two factors. First the maximum flow rate necessary, and second the total volume of soft water required between regenerations. In down-flow softeners the flow rate is limited by the pressure loss that is permissible under the existing conditions, and very seldom exceeds four gallons per minute per square foot of cross sectional area of the softener shell.

With up-flow softeners the flow rate is limited by that rate required to uniformly suspend the bed of zeolite which is six gallons per square foot per minute with green sand or glauconite and eight gallons per square foot per minute with the manufactured zeolite. At maximum flow rates the pressure loss through the up-flow softener is never more than one-half the loss through a down flow softener.

The total exchange capacity of the zeolite mineral used governs the size of the container for a given volume of soft water. Capacities of zeolite range from 3000 grains per cubic foot for glauconite to 16,000 or 18,000 grains per cubic foot for some manufactured minerals, a capacity of 10,000 grains being about the average.

In down-flow softeners the depth of bed is limited to about 36 to 42 inches because deeper beds pack so rapidly that increased pressure loss break channels through the bed before a full run is completed. With up-flow softeners, there being no increase in pressure loss since there is no packing of the suspended zeolite, the depth of bed is limited by economic considerations, that is, a very deep bed will give a longer time between regenerations than is required for a shallower bed, but of course the deeper the bed the greater the cost of installation.

Regeneration water loss is sometimes a very serious item in the operation of zeolite softeners. The total amount of water required for regeneration is roughly a function of the cross sectional area of the softener shell, so that with a given cross sectional area any method of increasing total capacity gives a corresponding decrease in the percentage of water lost in the operation. Therefore where water is either expensive or scarce an effort should be made to use as high a capacity zeolite and as deep a bed as can be economically worked out for the particular situation.

Zeolite softeners are always equipped with a salt saturator which consists of an open steel tank containing a layer of about six inches of gravel on which solid salt is placed. The salt is then covered with water and saturated brine is drawn out by an ejector through a pipe spider placed in the bottom of the tank. Solid salt must always be kept to a depth of at least one foot in this tank.

The saturated brine has an average concentration of 26 per

cent of sodium chloride and the ejector is set so that the brine as applied to the softener averages about 5 per cent sodium chloride concentration. If saturated brine is applied directly to the zeolite bed the volume of the brine is so small that it cannot completely fill the softener shell, and frequently large volumes of zeolite will not contact with the brine and so will not be revived.

The regeneration or brining of the zeolite must always be preceded by a back-wash or up-wash fast enough to suspend the entire zeolite bed to break up any packed sections and channels that may exist so that there will be a uniform application of brine.

The statement is frequently made that up-flow softeners do not need an up-wash. This is correct provided a softener was operated at its maximum rate immediately preceding the brining, but if it was operated below this rate, then the possibility exists that different sections of the zeolite bed may contain hard spots which will not get correct brine applications.

It is general practice with small softeners to select equipment that will require regeneration about once each 12 hours; with fairly large softeners, once each eight hours, and in exceptional cases where the softening plant can have considerable attention, once each six hours. The regeneration cycle can be completed in not to exceed 30 minutes from the time the softening run is stopped until soft water is again flowing into the system. In some cases, with very large softeners, a total of 45 minutes may be required.

The salt used for regenerating the zeolite is ordinarily a good grade of rock salt, although evaporated salt is sometimes used because of its lower insoluble content. Frequently oil well brines are found that have sufficiently low concentration of calcium and magnesium salts compared to the total sodium chloride concentration that they may be used directly for the regeneration of the softener, thus saving almost the entire operating cost. These brines must be oil and hydrogen sulfide free before being applied to the zeolite.

The usual amount of salt required is one pound for each 2000 grains of hardness removed, although by proper design it is frequently possible to obtain more efficient salting rates of 0.8 or occasionally as low as 0.6 pounds of salt per 2000 grains of hardness removed being secured. The use of natural brine or an attempt to use lower salt rates should never be tried without consulting a competent water purification expert.

The water to be softened by a zeolite softener must be clear, that is, free from turbidity or suspended matter, as any substances of this sort tend to coat the zeolite and impair its efficiency. If necessary suitable filters should be provided to secure a clear water.

The safety committee of the Shell Petroleum Corp. refinery at Sellers, La. responsible for the six-month safety record established at that plant. P. E. Foster, superintendent, is at the extreme right of the back row

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New Refining Patents

Refining Lubricants, U. S. P. 1,786,493, Dec. 30, 1930, application filed March 27, 1929; Edward W. Isom and Ernest B. Phillips, assignors to Sinclair Refining Co.

AS A MEANS of direct production of refined viscous oils, particularly lubricants, from crudes and topped crudes, a method has been developed for continuous refining of such oils in the presence of solid absorbents. The product of this treatment needs only to be separated from the solid absorbent, and in some cases from contained wax, to obtain the finished product. Among the suitable solid absorbents are "terrana" earth, acid treated clays, absorbent gels, and the like.

In operation, the absorbent refining agent is suspended in the raw stock, and the mixture is passed rapidly through a heating zone, where it is heated under non-cracking conditions (not over 750 degrees F.) and is then discharged into a vaporizing and digesting zone from which vapors of the undesired low-boiling components are drawn off. The period of heating in this zone is preferably about 5 times as long as the period of flow through the heating zone, and the temperature is so regulated as to distill off all undesired components, without cracking the residual oil. The oil discharged from the vaporizing and digesting zone is treated in any suitable way for removal of the solid absorbent.

What Is Claimed

In making refined viscous oils, an improved combined operation which comprises suspending a solid absorbent in the raw stock, passing the mixture in a rapid stream through a heating zone at not above 750 degrees F. and less than cracking temperature for the given time of heating, discharging the mixture into a vaporizing and digesting zone in which a body of liquid is maintained at about 620 degrees F. and from which vapors are taken off, maintaining the solid absorbent in suspension in the body of the liquid during this operation, discharging the refined viscous oil and suspended solid absorbent from the vaporizing and digesting zone, and so regulating the volume of liquid in this zone that the time of treatment therein is not less than 5 times as long as in the heating zone.

* * *

Treating Gasoline. U. S. P. 1,786,650, Dec. 30, 1930, application filed March 16, 1928; John M. Goodwin, assignor to the Texas Co.

FOR stabilizing and purifying cracked gasolines and like distillates, and particularly for improving their color and color stability, it has been found that the presence of hydrogen sulfide in the distillate during sulfuric acid treatment greatly enhances the beneficial effect. The exact function of the hydrogen sulfide in the chemical reactions involved in purification and stabilization is not known, but actual practice of the invention yields a superior product.

In operation, the distillate to be treated is first subjected to a low temperature distillation to remove dissolved gases and the very volatile hydrocarbons, such as propane and the like. If hydrogen sulfide is among the gases thus removed, it is redissolved in the residue of the distillation, to which hydrogen sulfide may also be supplied from extraneous sources, as required.

The preferred proportions for a typical treatment call for about 4 pounds of sulfuric acid (50 to 60 degrees Be.) per barrel of distillate, and about 5 pounds of hydrogen sulfide per 1000 barrels of distillate.

What Is Claimed

Stabilizing and purifying cracked naphthas by removing the undesirable lower boiling constituents by rectification, whereby hydrogen sulfide is also removed, and then treating with concentrated sulfuric acid in presence of a relatively small amount of hydrogen sulfide.

Committee D-2 Discusses Motor Oils, Gasoline

CLEVELAND, Feb. 16.—New specifications for gasoline, and for motor oils, revision of Federal specifications for Class D motor oils, and testing and classification of various petroleum products were the topics which occupied the attention of Committee D-2, A. S. T. M., at its first 1931 meeting at Baltimore on Jan. 29 and 30.

Technical Committees A, on gasoline, and B, on motor oils, working under the auspices of Committee D-2, held meetings on Friday, Jan. 30, to discuss general specifications for these products, at which other attending members of the parent committee were in attendance. These committees are for the purpose of developing specifications, etc., for these products.

The general work of the committee was discussed in a meeting following those of the technical committees, at which proposed revisions of the specifications for Class D lubricants, Federal specifications, were gone over in detail.

The annual report of the committee will be formulated at the March meeting, which will be held in connection with the regional meeting of the Pittsburgh section of the society.

New Unit for Lube Plant

TULSA, Feb. 14.—The Continental Oil Co. has contracted with the Alco Products, Inc., of New York for the erection of a new unit for its lubricating oil plant at the Ponca City refinery. The new unit will cost between $150,000 and $180,000.

It will be capable of handling 3500 barrels daily of pressed wax distillate to be processed into neutral lubricating oils. The unit will replace some of the old cylinder shell stills at the company's plant.

Walter Miller, vice president in charge of manufacturing for the Continental, said the unit will be of the most modern design, and will be a decided improvement over the units which it will replace.

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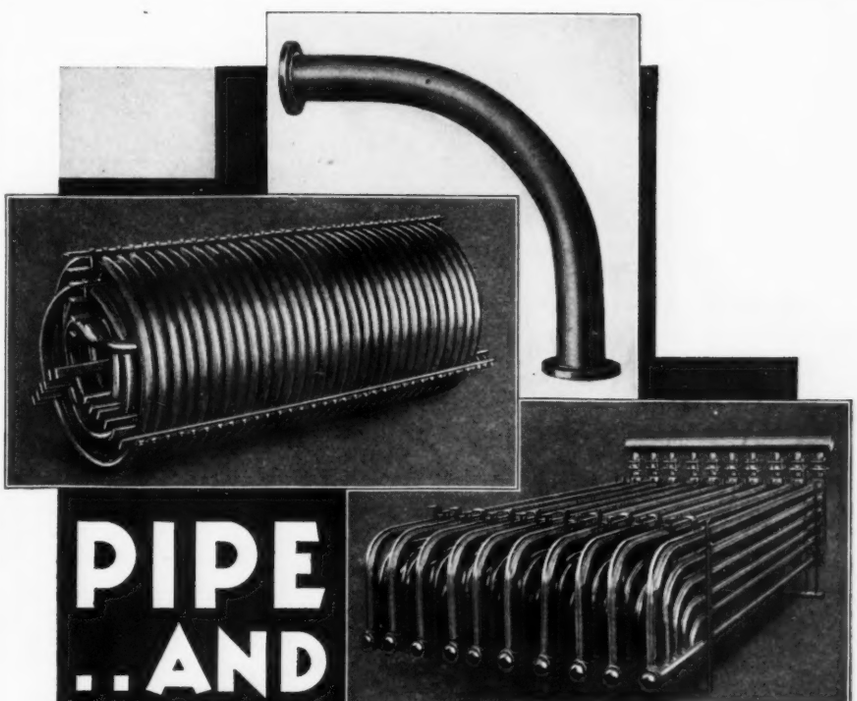

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Action of SO_2 on Mineral Oils

Operation of Sulfur Dioxide Continuous Treating Plant; Details of Operating Conditions; Control of Main Plant by Experimental Plant Results

By Arch L. Foster
N. P. N. STAFF WRITER

Part 2

THE plant installed in the Tide Water refinery at Bayonne, N. J., represents the most modern and complete application of the continuous counter-flow system, embodying several new features not found in the older plants of this type. Its capacity is rated at 2100 barrels of 50 gallons each, or 105,000 gallons of lubricating distillate per day, when treating with 100 per cent by volume of sulfur dioxide.

As the throughput of the plant is governed by the total volume of liquid handled, the capacity of finished oil produced per day will be correspondingly lessened by an increase in the percentage of SO_2 used, and increased by a lower percentage of solvent. The major steps of the process in the order in which they occur in the plant are as follows:

1. Dehydration of distillate.
2. Chilling of distillate and sulfur dioxide to operating temperatures.
3. Actual mixing and separating of distillate and sulfur dioxide in counter-flow system.
4. Utilization of low temperature of raffinate and extract from mixing system to cool incoming distillate and solvent.
5. Evaporation of solvent from raffinate and extract.
6. Recovery and condensation of solvent vapors from evaporators.

By an ingenious arrangement devised by Tide Water engineers it has been possible to quickly reduce the water content of the raw distillate to a maximum of 0.02 per cent before allowing it to come in contact with the sulfur dioxide. This is accomplished without any decomposition of the oil itself and prevents moisture from entering the system and thereby increasing the corrosive action of the SO_2. A flow

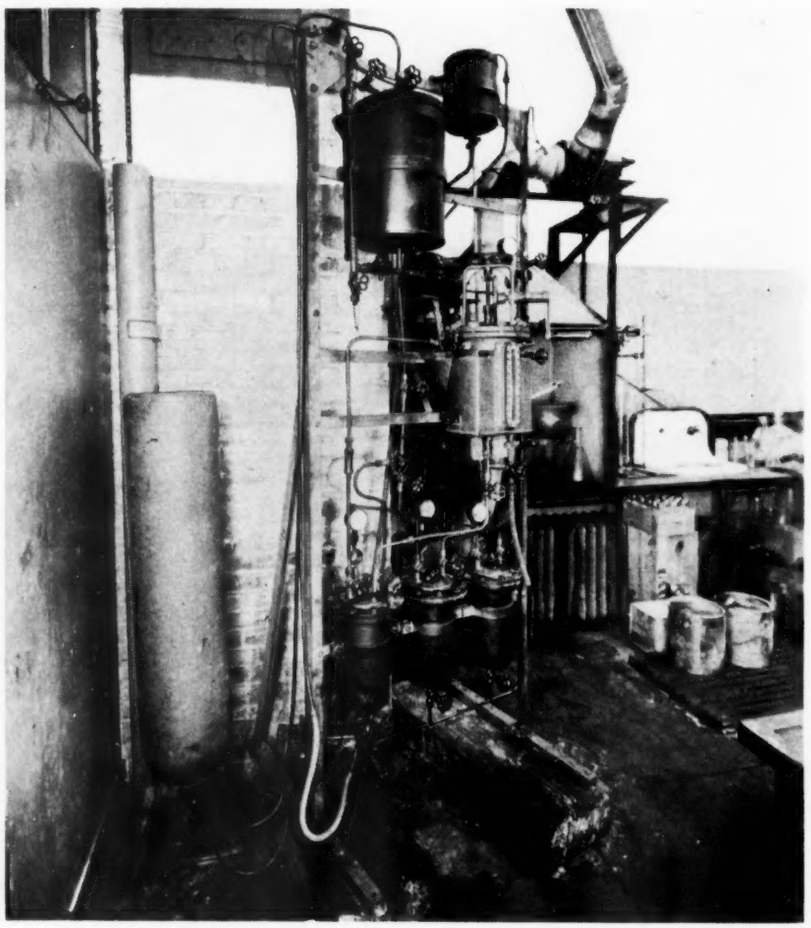


Fig. 10—Experimental SO_2 plant, used for control of operations of large plant

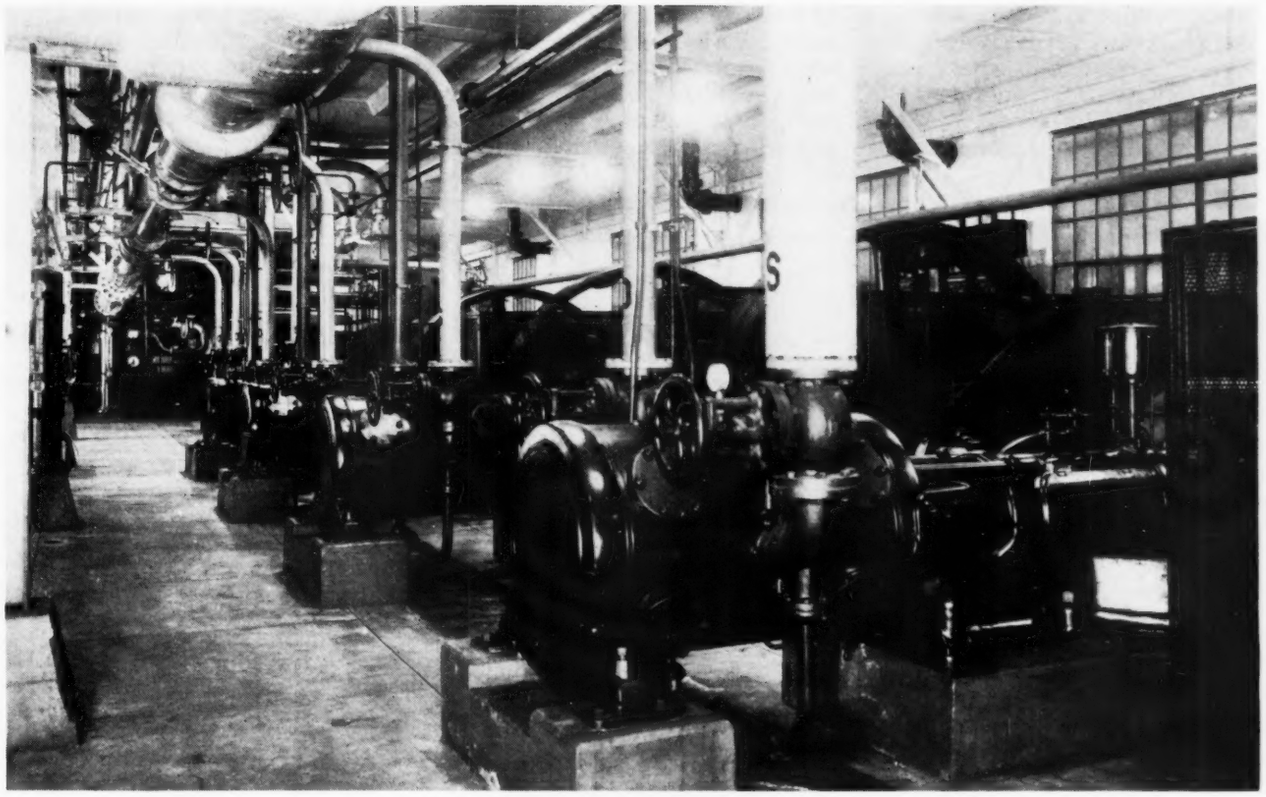


Fig. 9—SO_2 compressors

diagram of the unit is shown in Fig. 8.

Before entering the mixing system both the dehydrated distillate and the sulfur dioxide solvent must be chilled to obtain optimum operating temperatures. Three heat exchangers are used to cool the distillate. The cooling medium in the first is the incoming wet distillate mentioned above, in the second water is used, and in the third, the cold finished raffinate, on its way to the evaporators, is the cooling agent.

Before entering the third exchanger, the distillate receives a small amount of solvent in order to reduce its viscosity and facilitate pumping. From the exchangers the distillate is pumped to the cold distillate tank where further cooling may be accomplished if necessary by releasing pressure, thereby evaporating some of the sulfur dioxide. The temperature of the oil in the cold distillate tank before entering the mixing system ranges from 20 to 30 degrees F.

Meanwhile, the sulfur dioxide from the collecting tank is cooled by passing through a heat exchanger counter-current to the cold solvent-extract mixture from the mixing system. The solvent then passes to the sulfur dioxide cooler where further cooling is effected by evaporating part of the liquid sulfur dioxide. Sufficient solvent is evaporated to bring the temperature of the remainder to 5 degrees F. The cold solvent is now ready to enter the mixing system.

The mixing system consists of four mixing chambers, each of which is connected with a separator below it. The chilled distillate and solvent enter the system in opposite directions and pass through counter-currently. The chilled oil enters No. 1 mixer, is mixed with the solvent from No. 2 separator, and then passes to No. 1 separator, where the separation of raffinate and solvent takes place readily due to the difference in specific gravity.

The solvent from No. 1 separator, having been used four times, goes to the extract evaporators while the raffinate continues through the system, passing through separators 2, 3 and 4 by way of their respective mixers. In the last mixer the oil, already extracted three times, meets a stream of fresh solvent which removes the last portion of the less soluble impurities. The cold refined raffinate is then pumped to the refined oil tank.

Before evaporating the solvent from the refined oil and the extract, the low temperature of these products is utilized for cooling purposes. The raffinate, as mentioned above, is used to chill the incoming distillate and then passes through a second preheater where it picks up temperature from hot solvent-free oil from the raffinate evaporators. The raffinate is then ready to go to the evaporators.

The extract is treated in a similar manner, first being used to cool the incoming solvent and then passing through a preheater heated by hot solvent-free extract from the last evaporator.

The raffinate contains from 10 to 15 per cent of solvent which is removed in a battery of three raffinate evaporators operated multiple effect. Each of the three evaporators is equipped with a steam heater through which the oil must pass before entering the evap-

orator. The first effect operates at a temperature of 170 degrees F. and under a gauge pressure of 65 pounds per square inch; the second at 210 degrees F. and atmospheric pressure; and the third or vacuum effect at a temperature of 240 degrees F. and under an absolute pressure of one-half inch mercury. The high temperature and low vacuum in the last effect serve to remove all but the smallest trace of solvent.

The extract from No. 1 separator contains 85 to 90 per cent of solvent, which is re-

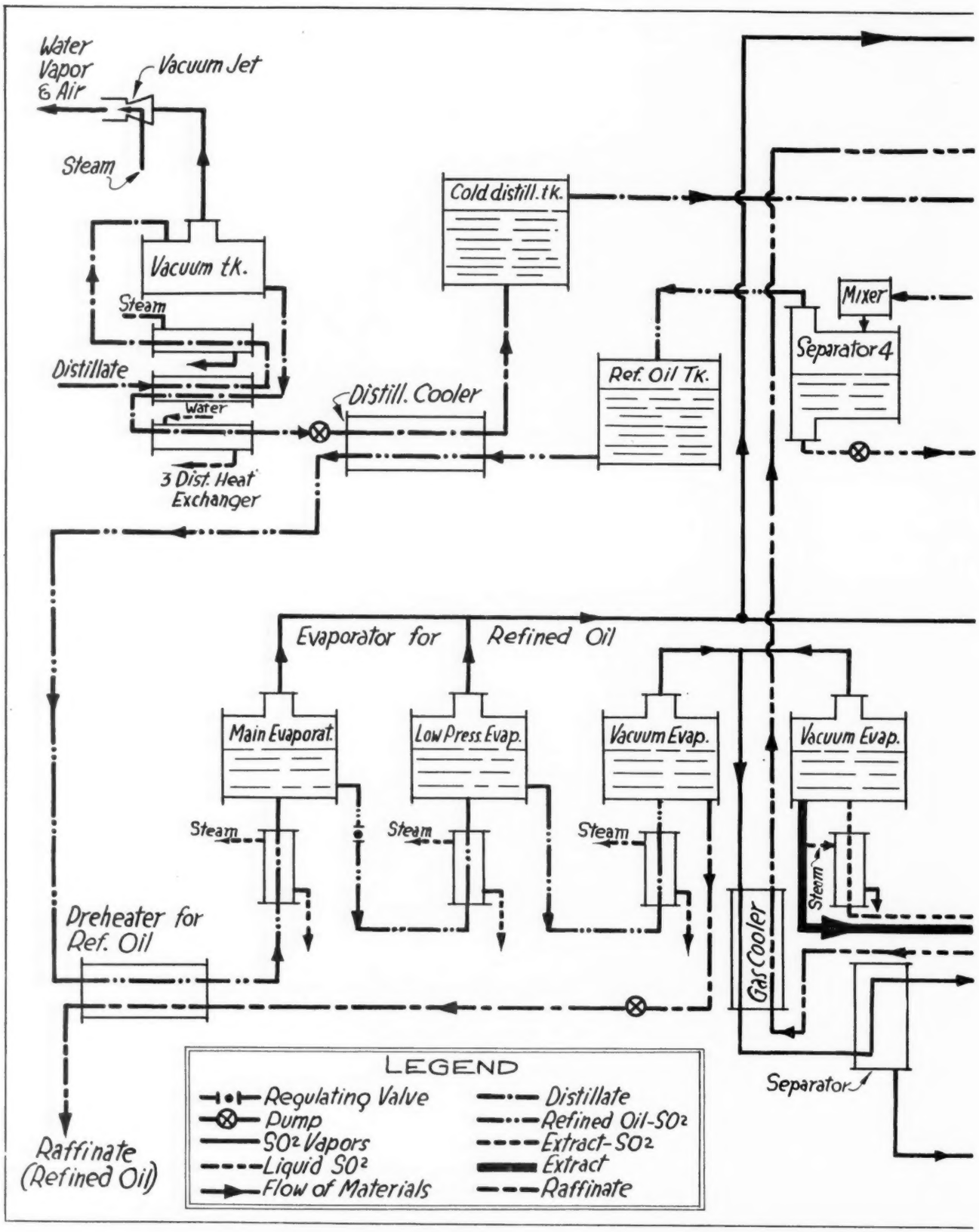
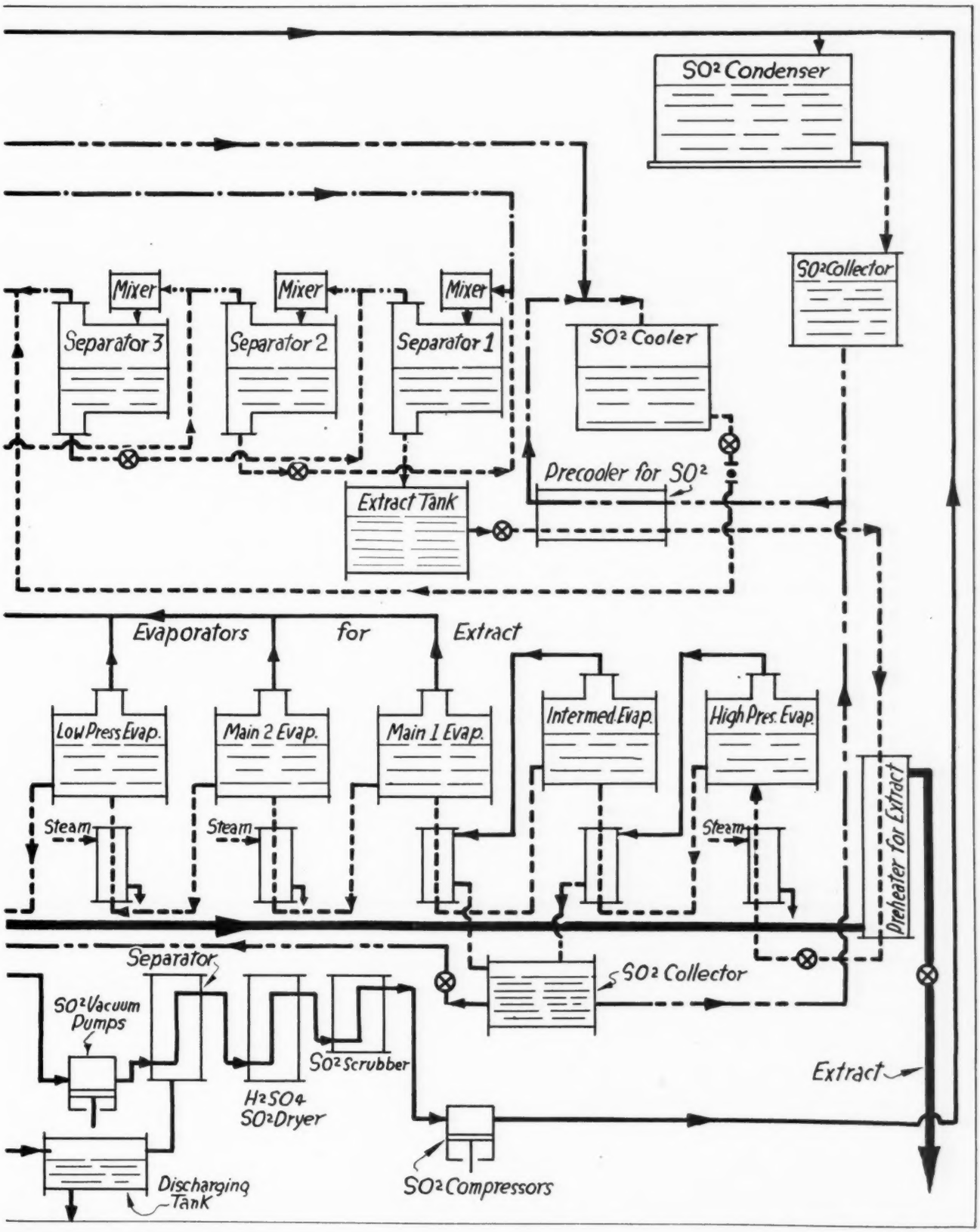


Fig. 8—Flow-diagram, Edeleanu

moved in a battery of six extract evaporators. The greater number of evaporators used here is made necessary by the much greater percentage of solvent in the extract as compared with that in the refined oil.

The first three evaporators are operated triple-effect, the heat for the second and third evaporators being supplied by the condensed vapors from the preceding effect. Steam heaters, similar to those used with the raffinate evaporators, supply heat to evaporators Nos. 1, 4, 5 and 6.

Representative temperatures



continuous lubricating oil plant

and pressures for this system of six stills are given below.

	Evaporator	
	Temperature °F.	Gauge pressure lbs. per sq. in.
First	150	165
Second	140	130
Third	110	70
Fourth	170	70
Fifth	205	*....
Sixth	240	†....

*Atmospheric.

†½-inch Mercury, Absolute.

The final step in the process is the recovery and condensation of the solvent vapors from the various raffinates and extract evaporators. The vapors from all evaporators except the two operating under vacuum are collected in a common line through a header, and are carried to a water-cooled condenser from which the liquid condensate is pumped to the solvent collector for re-use in the cycle.

The hot vapors from the vacuum evaporators of both raffinate and extract batteries are carried through a gas cooler, then through a separator, to remove entrained moisture and oil vapors, and into the suction side of the vacuum pumps. On discharge these pumps force the gas through another separator, a sulfuric acid gas dryer, and a scrubber into the suction side of the sulfur dioxide compressors. From the compressors (Fig. 9), the gases pass to the water-cooled condenser and the liquid condensate is pumped to the solvent collector, ready to be cooled and recycled.

The outstanding feature of the plant is the heat economy effected by the extensive application of the counter-flow principle in the numerous heat exchangers throughout the system. This heat efficiency is further increased by the use of heavy insulation on the exposed surfaces of tanks and lines, the combination of insulation and exchangers permitting the plant to operate with a minimum supply of heat from an external source.

Pilot Apparatus in Experimental Laboratory Controls Operation of Main Plant

Probably the most unique, certainly the most important, feature from a control point of view is the pilot or control plant employed by the Tide Water Oil Co. in studying the conditions of operation of the main plant.

Not only do the operating technologists of the plant check up on the operation as carried out in the big plant by means of this small plant but new methods in details of operation are studied in the small set-up. New charging stocks are run in this control apparatus, and the causes of malfunctioning occurring at any time in the large installation are investigated and remedies prescribed. This keeps the efficiency of operation and the quality of the product up to the highest standard attainable under practical conditions.

The apparatus for control and research is shown in Fig. 10. The pilot may be operated either continuous or batch, as occasion warrants, and the equipment provided parallels the main features of operation of the manufacturing plant. This small plant consists of a mixture agitator, a sulfur dioxide container, condenser, solvent supply tank and three evaporators for extract solution.

At present the raffinate and its small amount of dissolved sulfur dioxide are transferred to separate evaporators, where the last traces of the solvent are removed from the finished oil. All the essential operations of the process are carried out on a small scale, frequently in batch for greater ease of handling and for conserving time.

The design of the apparatus, which was developed by the "Allgemeine Gesellschaft Fur Chemische Industrie," developers and owners of the Edeleanu process, and experience in comparing its results with those obtained in large-scale practice, enable the operators to closely correlate the results obtained on the small scale directly with those it is desired to obtain from manufacturing.

When it is desired to change the method of operating the main plant, to operate on distillates of differing characteristics, or to introduce distillates from a new source into the operation, small samples are tested exhaustively in this apparatus. Time and degree of agitation, percentage of solvent, optimum temperatures and pressures, and all other essential data regarding the most economical manner of producing a refined oil of the desired properties are determined, and, except in emergency, operation under the new conditions is not undertaken until the experimental data needed is received from the laboratory.

From these data the conditions of operation are decided upon, and, according to company technologists, suitable conditions are easily determined with exactness in advance of any determinations by actual operations of the main plant.

Magnolia Petroleum Transfers

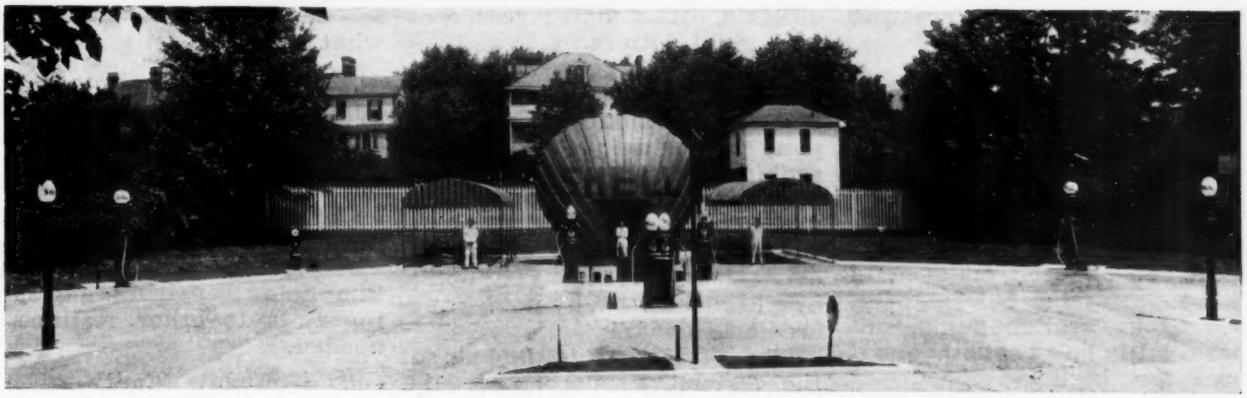
FORT WORTH — W. O. Gatton, now in charge of Fort Worth district marketing offices of Magnolia Petroleum Co., succeeding J. C. Stephens, recently transferred to Dallas as transportation vice president, was formerly located at Amarillo. Mr. Gatton, who spent 11 years in the Panhandle, directed the 1930 Red Cross campaign at Amarillo, was president of the Board of City Development, head of the Lions Club there and president of the Amarillo Country Club.

Mr. Stephens spent 11 and a half years at Fort Worth, three as district manager, and also was active in civic affairs.

Southwest Land Men Elect

SAN ANTONIO—The Southwest Texas Oil Scouts and Land Men's Association, with headquarters at San Antonio, has elected M. J. Bonham, president; R. E. McClung, vice president; and L. R. Caskey, secretary-treasurer. Mr. Bonham heads the Continental Oil Co.'s southwest Texas land department. Mr. McClung became southwest Texas manager of Phillips Petroleum Co.'s land department after its absorption of Independent Oil & Gas Co., with which he was previously connected. Mr. Caskey represents the Republic Production Co., of the J. S. Cullinan group, Houston.

ADVERTISING PAGES REMOVED



A station of the Quality Oil Co., Winston-Salem, N. C. built in the shape of a shell. This company distributes products for the Shell Petroleum Corp.

Perpetual Inventory for All Stocks At Each Station

WINSTON-SALEM, N. C.

PERPETUAL stock inventory is kept by service stations of the Quality Oil Co. of this city.

Stock record blanks have space for listing inventories, cash and charge sales, and payments on accounts receivable. These blanks are supplied each station in duplicate. The original is sent to the office daily, with sales tickets and bank deposit slips. The duplicate is retained at the station.

Across the top of the report are vertical columns listing all goods sold at the station. There are six horizontal columns across the top. In order they are: goods on hand in the morning, based on inventory taken when the station opens; deliveries; total goods, stock on hand plus deliveries; sales; balance of goods on hand, totals minus sales; and actual inventory taken when the station closes at night.

The seventh column is for office use in checking cash from sales of each item.

On the lower part of the report are two divisions, one for cash sales, the other for charge tickets.

Under cash sales the columns list the goods sold at the station. On the left of each item is a column for filling in the number of units sold. The column on the right is for the amount taken in for cash item. Below this listing is space for noting payments on accounts receivable.

Three columns complete the cash sales report: total cash received, amount paid out, and the day's bank deposit.

Each station deposits daily the amount of its cash sales less any money paid out.

Under the "charge tickets" record are spaces for listing each credit sale. From the charge tickets this information is recorded on the daily report blank: ticket number, name of customer, goods purchased in quantity, and amount of sale.

J. H. Glenn
President of the Quality Oil Co., Winston-Salem, N. C.

Managers of stations are held responsible for all stock at their place of business. The Quality Oil Co. was organized in March, 1930, and the daily report blank and the holding of managers responsible for stock are two operating plans that have been developed.

When the stations were opened all employes at the station were held responsible for stock. The inevitable happened, and there was considerable "passing the buck" when shortages arose. Finally the company placed all responsibility on the manager.

At present the company has six stations in Winston-Salem. It handles Shell petroleum products in Forsyth and Stokes counties, N. C., but it is concentrating its sales efforts on its service stations.

To make its stations distinctive the company built most of them in the shape of a shell. The only opening in the front is the door to the attendant's office. On one side, to the rear, are the rest rooms, and on the other side is a room for the air compressor and supplies.

These stations are built of concrete, and the front is ribbed. There was considerable difficulty encountered in building the first station, but after forms were made there

was little trouble in erecting others.

Across the front of the building, above the door, is the one word "Shell" in large lettering.

Another station was being erected in January on a downtown corner. The shell design could not be used on account of the size of the building, but over each gasoline pump unit there will be a shell about three feet high.

In developing business for its stations the company has used personal solicitation by its officials, direct mail pieces, and individual letters.

When a charge account customer has not used his account for several months the company has a unique method of seeking a renewal of his business. A regular statement is mailed this customer. Across the space for listing his account is stamped, "You don't owe us a cent. Why not? Your credit is good."

The statement is folded so the customer is perplexed. His reaction is that he has paid his account so why does he receive a statement. On opening the second fold the customer finds what it really is.

The stations at present are handling some accessory items. When the downtown station is complete, tires and tubes will be added. A limited stock will be kept at all stations, while the downtown outlet will be the mother station, handling a full line, doing repairing, and moving tires to other stations as needed.

The official family of the Quality Oil Co. is J. H. Glenn, president, and Bert L. Bennett, vice-president.

Weather ____________ Report Made by ____________ Station Manager

DAILY REPORT FOR STATION No. ________

Day ____________ Date ____________ 193__

PRODUCT	400 GAS	SUPER GAS	KERO-SENE	25c OIL	30c OIL	35c OIL	FLUSH OIL	ALCO-HOL	ALCO-GLYC.	OTHER ANTI-FREEZE	TIRES	TUBES	SHOES	CANS PATCH	BULBS	VALVES	FAN BELTS	CEMENT	RAD SEAL	TOP DRESS	OTHER ACCES.	1 LB GREASE	5 LB CANS GREASE	25 LB PAILS GREASE	1 GAL CANS OIL	5 GAL CANS OIL	CANS POLISH
On Hand (A. M.)																											
Purchased (Plus)																											
TOTAL																											
SOLD (Minus)																											
Balance (P. M.)																											
Actual Inventory																											
Sales (Office use only)																											

CASH SALES (AS PER REGISTER TAPE)

UNIT	PRODUCT	AMOUNT
	400 Gasoline	
	Super Gasoline	
	Kerosene	
	25c Motor Oil	
	30c Motor Oil	
	35c Motor Oil	
	Flushing Oil	
	Alcohol	
	Alco-Glyc.	
	Other Anti-Freeze	
	Tires	
	Tubes	
	Shoes	
	Cans Patching	
	Bulbs	
	Valve Cores	
	Fan Belts	
	Cement (Tubes)	
	Radiator Seal (Cans)	
	Top Dressing (Cans)	
	1 Lb. Cans Grease	
	5 Lb. Cans Grease	
	25 Lb. Pails Grease	
	1 Gal. Cans Motor Oil	
	5 Gal. Cans Motor Oil	
	Polish (Cans)	
	Cars Washed	
	Cars Greased	
	Cars Polished	
	Shots Grease	
	Spring Spray	
	TOTAL CASH SALES	
	Less Coupons	
	TOTAL	

Name of Account Rec'd	FULL CREDIT	DISCOUNT
TOTAL		

Paid Out

TOTAL PAID OUT

Today's Deposit

CHARGE TICKETS (LIST SEPARATELY)

TICKET NO	NAME	GALS 400	GALS SUPER	QTS OIL	NO	OTHER ITEMS NAME	AMOUNT	TICKET NO	NAME	GALS 400	GALS SUPER	QTS OIL	NO	OTHER ITEMS NAME	AMOUNT

Daily station report blank used by the Quality Oil Co., Winston-Salem, N. C.

New Air Pressure System For Gasoline Pumps

WINSTON-SALEM, N. C.—A new system for delivering gasoline at service stations from storage tanks through the pumps is being developed by an electrical supply company in Winston-Salem, N. C.

Gasoline is drawn by gravity from the regular storage tank into a smaller auxiliary tank. Air pressure moves the gasoline from the auxiliary tank through the pumps. Any number of outlets, either meters or visible pumps, may be served by the one auxiliary tank.

About 20 pounds air pressure is applied to the auxiliary tank. The regulator on the air line is a valve for reducing the pressure, a gauge showing pressure from the compressor, another gauge showing pressure on the auxiliary tank, and a magnetized coil that moves a piece of steel over the air line to the auxiliary tank. The regulator has been named "Pike's Multi-Pump."

The multi-pump is automatic. As the hose nozzle is taken from the hook at the pump, air pressure is applied to gasoline in the auxiliary tank. When the nozzle is opened the gasoline flows. Air pressure is removed from the auxiliary tank as soon as the hose nozzle is returned to the hook; the remaining air in the auxiliary tank escaping through the vent pipe, and the auxiliary tank filling immediately by gravity from the regular storage tank.

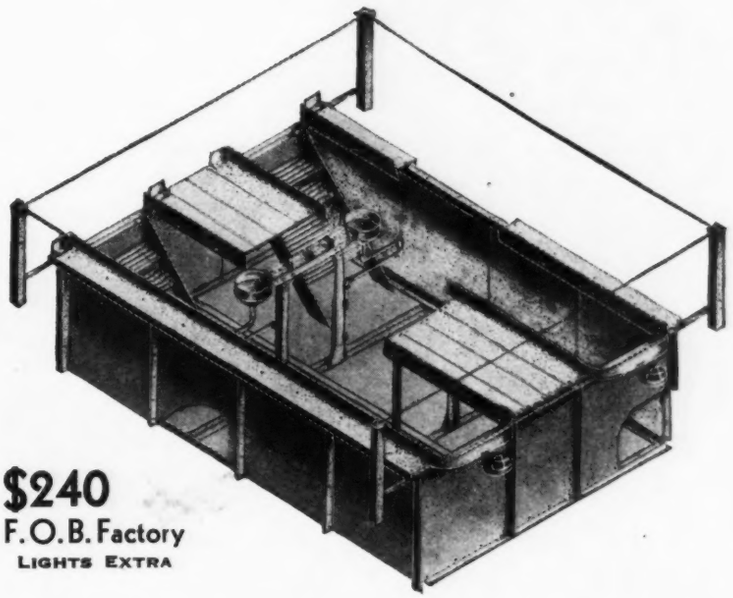
A multi-pump unit is required for each grade of gasoline. The size of the auxiliary tank depends upon the number of pumps to be served. Two pumps may be served, for instance, from an 85-gallon auxiliary tank. The multi-pump is placed in the compressor room.

W. E. Pike, superintendent of the Clinard Electric Co., Winston-Salem, developed the system. The Clinard Co. is manufacturing the multi-pump, and makes all installations of the gasoline dispensing system at stations except for the regular storage tank and the pumps.

MARNALL

ALL-STEEL LUBRITORY

Pioneer in Multiple-Pit Construction
Last word in Automotive Lubrication



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Marnall all-steel "multiple" pit sections are cheaper to install.

They cost nothing to operate—no moving parts hence no maintenance expense—no compressed air or electric current; and permit the installation of smaller compressors resulting in less maintenance and longer compressor life.

They have no inside walls or obstructions or partitions; therefore one man can handle several jobs at the same time.

They have a complete oil-drain system with each section which allows crank-case oil-draining and refilling in a single operation.

They have 100 percent salvage value and can easily be moved from one location to another or increased in capacity at anytime.

They make it possible for drivers and passengers to remain in their seats or alight at will while the car is being serviced.

They permit the starting and operation of motor when desired to aid "flushing" while the residue is draining from crank-case.

Their installation will "attract" greasing and oil-draining trade to any service station and INCREASE YOUR PROFITS.

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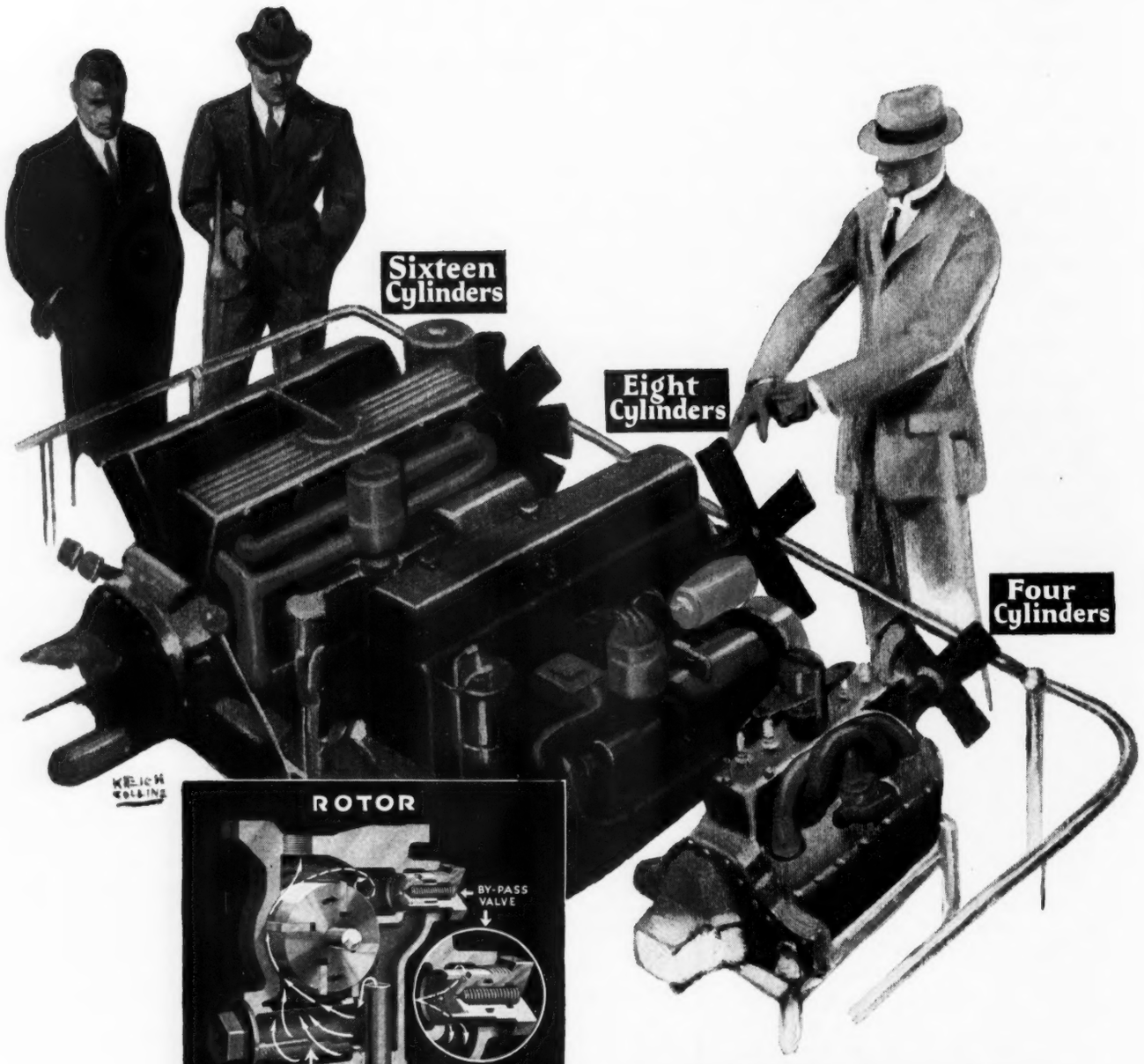
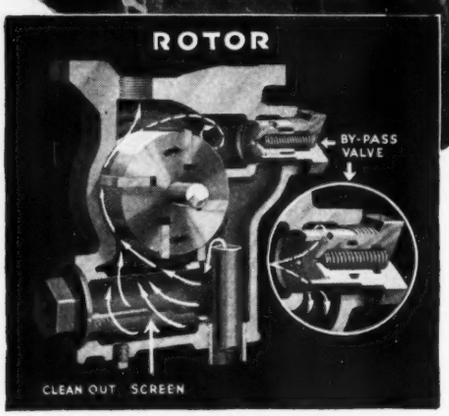
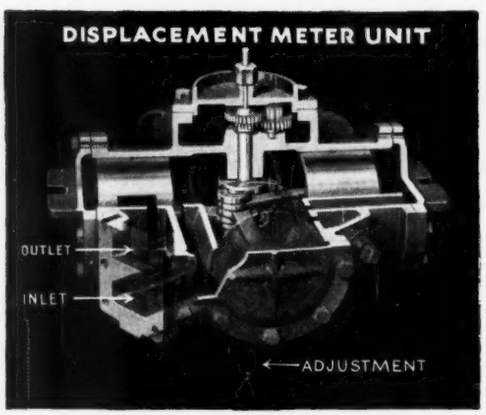
...so with





Cut-Away View of Pumping Unit

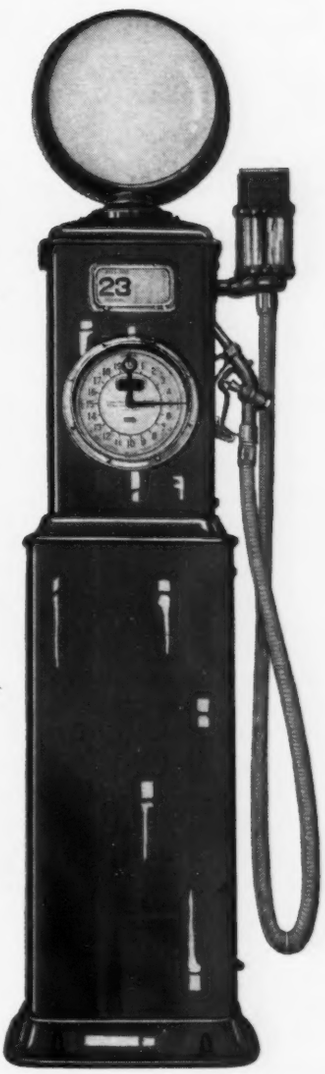
NOTE THE SIMPLICITY OF BOTH ROTOR AND BY-PASS VALVE DESIGNS. THE PATENTED BY-PASS VALVE PREVENTS OVERLOADING; BANISHES NOISE; ELIMINATES APPRECIABLE CURRENT VARIATION WHETHER NOZZLES ARE OPEN OR CLOSED; AND REDUCES CURRENT CONSUMPTION.



THE BENNETT POSITIVE DISPLACEMENT IS OF ALL-METAL CONSTRUCTION. PISTONS ARE OF LIGHTWEIGHT ALUMINUM ALLOY. CYLINDER WALLS ARE OF SOLID BRONZE. ALL OTHER WORKING PARTS ARE OF STAINLESS STEEL. PROLONGED TESTS HAVE PROVED THAT THIS NEW METER IS ACCURATE UNDER ALL OPERATING CONDITIONS.

Modern Metering Pumps

PRINCIPLES AGREE *but* PERFORMANCES DIFFER



THE NEW BENNETT POSITIVE DISPLACEMENT METERING GASOLINE PUMP LINE INCLUDES MODEL DM 150, THE "SINGLE" UNIT SHOWN ABOVE, WHICH DISPENSES THROUGH ONE HOSE; AS WELL AS A "TWIN" UNIT, MODEL DM 450, CONSISTING OF TWO INDIVIDUAL COMPLETE PUMPS ENCLOSED IN ONE HOUSING, WITH EACH PUMP OPERATING INDEPENDENTLY.

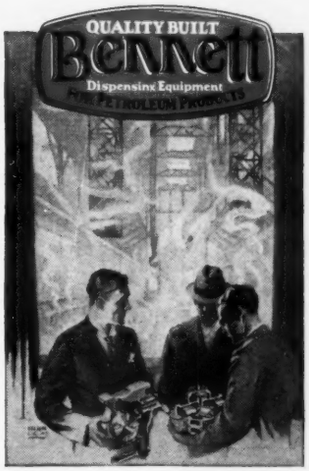
THE PROVEN BENNETT NUTATING TYPE METERING GASOLINE PUMP LINE CONTINUES TO BE AVAILABLE IN A WIDE RANGE OF ELECTRIC SINGLE, DOUBLE AND TWIN MODELS.

GONE ARE the days when any particular feature or application of the internal combustion engine principle was accepted as an index of superior performance. Today the reputation of *any* gasoline motor is won solely on the basis of its all-around efficiency. It *must* be good in *every* particular.

JUST SO with *positive displacement* metering gasoline pumps. If the power or pumping assemblies are perfected at the expense of the *displacement* unit, the completed pump fails in the first essential of efficient performance. If the meter is a marvel of precision while the clock assembly is inefficient the completed pump cannot function as a *synchronized* unit.

THE new *Bennett Line* of *Displacement Metering Gasoline Pumps* has been designed and manufactured in strict accordance with a unified conception of the entire pump. *Every* part has been considered as closely interrelated. Performance and accuracy have been obtained through the complete synchronization of *all* working parts.

IF YOU consider critical investigation a necessary preliminary to selecting a *displacement metering pump,* by all means let us send you the facts on the new *Bennett DM Positive Displacement Series.*



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CLEVELAND—5305 Sweeney Ave.
DALLAS—947 S. Lamar St.
LOS ANGELES—1001 E. First St.
NEW YORK—32 Broadway
EMERYVILLE, CALIF.—Rheem Mfg. Co.
PITTSBURGH—304 Koppers Bldg.
ST. LOUIS—1405 Ambassador Bldg.
TORONTO—101 Hanson St.
VANCOUVER, B. C.—824 Hornby St.
WINNIPEG—1021 Winnipeg Ave.

FOREIGN DIVISION, 32 Broadway, New York

Merchandising and Jobbing Ideas Marketers Are Practising

By E. L. Barringer
N. P. N. STAFF WRITER

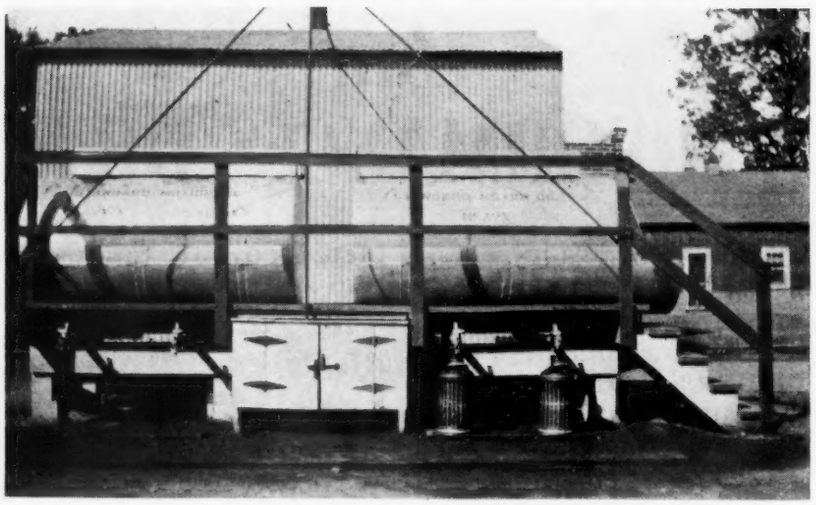
Old Truck Tanks Help Cut Costs

One method of reducing marketing costs is to place old equipment in service again for a new purpose. An illustration of the point is found at the Washington and Richmond branches of the Standard Oil Co. of New Jersey where discarded truck tanks were returned to service as bulk plant motor oil storage tanks.

In commending this practice Salesmotor, a New Jersey Standard house organ for employes, points out that these tanks had little value as scrap metal. But as motor oil storage tanks they effect economies in permitting small plants to receive oil in tank car lots where formerly their size did not warrant the installation of new storage tanks.

At the Washington branch two tanks were placed on a cradle far enough above the ground for filling five-gallon buckets. Under the fill lines concrete boxes were filled with sand. This practice kept the dripping oil off the ground, and permitted frequent changes of sand to keep the plant yard clean.

A rail was built beside the platform to prevent injuiries in falling. Over the tank compartment domes weather boxes were built to keep out the rain.



At the Washington branch of the New Jersey Standard costs were cut by using these two truck tanks for motor oil storage

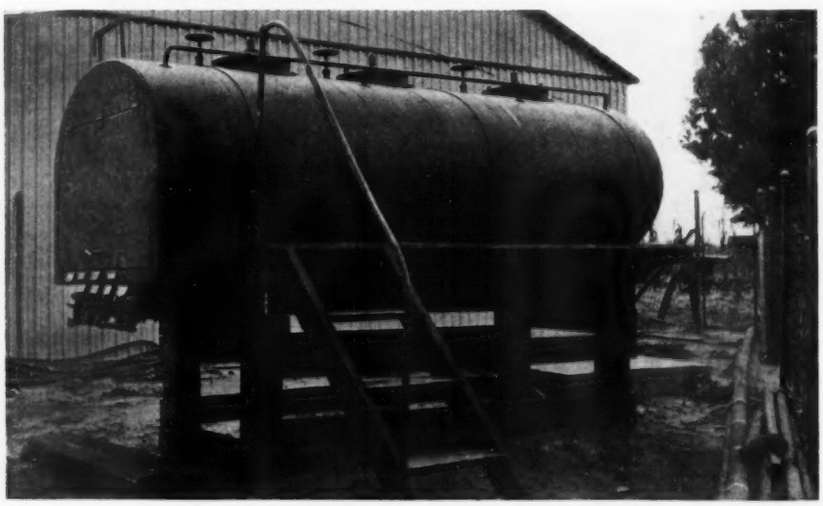
* * *

Federal Contract Helps Increase Regular Sales

The Charleston Oil Co. turned its award of a federal contract to good advantage in increasing its sales to the trade. During the current fiscal year this company is supplying the U. S. Lighthouse service at Charleston with 30,000 gallons of kerosine.

Much space was used in Charleston newspapers to tell that the same grade of kerosine supplied the trade was being used by the Lighthouse service. And domestic sales took a big jump.

* * *



An old truck tank at the Richmond branch of the New Jersey Standard returns to use as a motor oil storage tank

Now a One-Stop Station Added a New Department

When a one-stop service station adds a new department it must solve a problem more serious than buying equipment, hiring additional labor, and advertising the new service.

The new department must be so organized that the first job turned out will be as good as that done after six months experience. Experimenting on customers' autos is a costly method of gaining experience.

Such a problem confronted Russell Harp, operating two large one-stop stations in Akron, Ohio, recently and he solved it by forming a trade alliance with an established busi-

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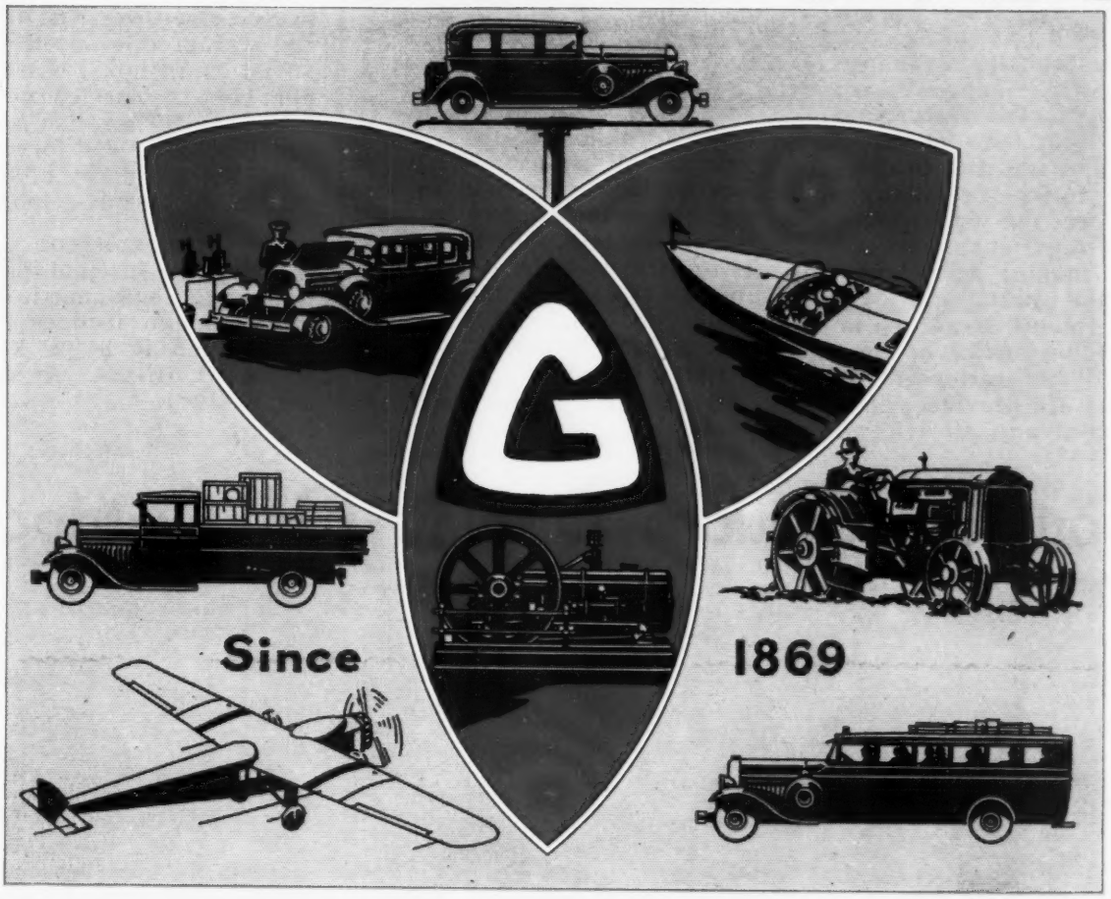
GALENA OILS



FRICTION'S FOREMOST FOE

Whether you need motor oil or airplane lubes—zero test or summer grade — greases or industrial oils — in drums, carloads or tank cars—Galena is equipped by 62 years of experience to meet your every requirement.

Refer all your lubricating needs to Galena. Be assured of lubes that are of superior quality—faithful to specifications and priced to net you unusual profits. Write or wire for quotations TODAY.

From Franklin, Penna.

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41 East 42nd Street New York City

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Warehouses in 18 Principal Cities

ness house. Mr. Harp furnishes the customers, and the space to do the work. The other company performs the labor.

The stations were not equipped for brake work. Customers kept asking for this service. Mr. Harp wondered if he could profitably add this service, yet he did not want to experiment with his customers thus driving away trade from all other departments.

The established brake service company was approached. Mr. Harp presented his proposition in the light that he had many customers wanting brake service. Here was a company ready to perform the work. Why not divert these customers to the brake company, each firm sharing in the profits.

As a result Mr. Harp is setting aside a portion of the space at one of his stations for brake service. He provides, also, the light, heat and electric power. The brake company in turn provides all the equipment, including a brake tester, and materials, under a long term contract.

The department will be considered similar to others in merchandising the services of the station. Mr. Harp will collect for brake work, and the income will be shared by each firm.

* * *

Free Greasing Keeps Service Men Active

The Dobbs Tire Co., Goodyear tire distributor in Atlanta, has devised a method to keep its service men active in greeting customers. Only it costs the company a free grease job in case the service men are not quick enough, and too many free grease jobs cost the service man his job.

Over a door to the service departments the company has placed a bell. The rope to ring the bell may be reached from the driver's seat in an auto. It is disconcerting to service men to have the bell ring, because the customer who can ring the bell before the service man reaches him receives a free grease job.

Some customers, probably of Scotch ancestory, try driving in the station at a speed of about 35 miles an hour, but it is seldom that the service man comes in second. There is no docking the pay envelope for the free jobs, but too many of them result in the loss of a job.

The management, though, has sporting instinct, as it likes to hear the bell once in a while. Even though it does cost the grease job it helps keep the men on their toes. At this writing the bell has been inactive for three months.

Southern Stations Display Oil Outdoors

CHARLESTON, S. C.

SERVICE stations in the south—Virginia, North and South Carolina—display motor oil outdoors.

Oil is kept in 60-gallon containers either on the gasoline pump island, or in front of the station building. The only protection against theft is locking the pump handle at night.

Only a few stations put the oil containers permanently inside the building. But the Charleston Oil Co., Charleston, S. C., has made a compromise between the outdoor and indoor oil display.

This company keeps its oil containers in a bay in the station front. The bay balances the display window on the other side of the door. During the day the containers are on display and they may be reached easily by attendants. At night they are covered by a sliding door.

Many southern stations selling cold drinks have this merchandise on display on the pump island also. This is self serve merchandising—the customer helps himself and pays the attendant.

Tires are well displayed at stations of the Standard Oil Co. of New Jersey. Several casings are in front of the stations in metal standards. The mounting equipment also is in front of the station, or along the drives, to advertise that tires are being sold.

Single Station Sells 102 Coupon Books

The cry of business depression was no obstacle to the men at Lyman's Cities Service station in Oberlin, Ohio, putting on a successful coupon book sales campaign in December.

In the first weeks the men of this station sold 102 books—sold them for $10 each, no discount, and for cash. And this was done in a small town of a few thousand population, made up mostly of college students; and right in the middle of the Christmas shopping spree.

How did they do it? Took the books in hand and went out on streets and asked people to buy.

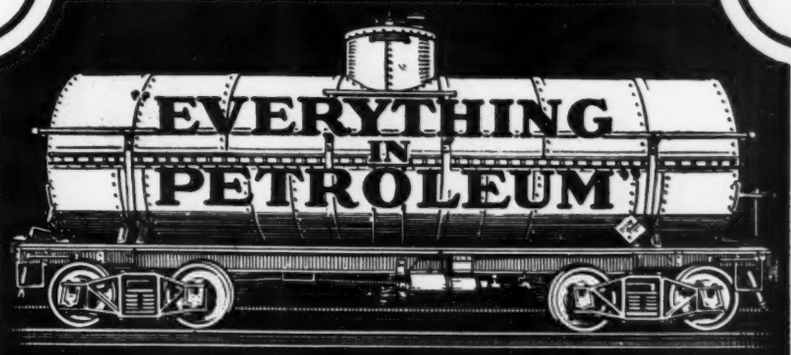
Selling $1020 worth of gasoline in advance is a real accomplishment for a single service station.

1907 Cadillac Advertises Quaker State Motor Oil

The life of the average automobile may be seven years, but there is an old Cadillac rapidly approaching a quarter of a century of service advertising Quaker State oil in N. C.

Several years ago L. H. Martin, Greensboro, N. C., found a 1907 model Cadillac in South Carolina. He purchased the car, drove it back, a distance of 150 miles.

Across the back of the seat this sign was painted: "It's never too late to use Quaker State. 1907 one cylinder Cadillac." Since then it has been driven on the streets, and at county fairs, and has been good advertising for Mr. Martin, who is distributor for Quaker State over most of North Carolina.



Water White
KEROSENE

All Grades and Gravities

for

FURNACE OIL
TRACTOR FUEL
ILLUMINATING OIL
INCUBATORS—STOVES

MOTOR OILS

All Grades and Specifications

From Pennsylvania or other High Grade Crudes

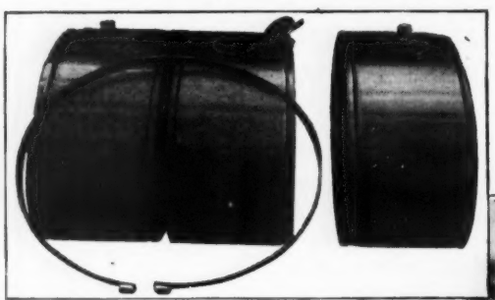
OFFICIAL INSIGNIA PERMIT NO. 318
Guaranteed 100% PURE PENNSYLVANIA OIL
PENNA GRADE CRUDE OIL ASSN

WILLOCK
OIL CORPORATION
Pittsburgh, Pa.

Farrell truck tanks

Standardized designs for fleet operators . . . combinations of all that is sound in truck tank engineering plus the individuality of the user . . . resulting in fleets of distinct advertising and sales appeal, of *maximum pay-load capacity and lowest unit cost per gallon handled.*

Throughout the nation you will find many, many Farrell fleets, from the many frozen month territories of the north to the sunny Gulf — among rural bulk station companies running three or four units to the state and national companies operating thousands of truck and trailer jobs.



Long, hard, fast travel *metal racking* service has proven Farrell *flexible unit-tank construction* better. Greater adaptibility for sizes, shapes and chassis. Lowest maintenance cost. Maximum pay-load capacity.

Farrell's fleet engineering service created this dual unit. A combination Gasoline and Fuel Oil tank unit. Gasoline in the summer, fuel in the winter . . . one unit, 100% efficient . . . interchangeable service at anytime.

4 compartment, 1000 gallon capacity, oval tanks equipped with 14" manholes, 6" fill caps, vents, emergency valves *and 2½" fill tubes extending to the bottom of each compartment.* Diamond pattern walk across top of tank, stream line steel bucket box, bumper, drop side panel sign boards, hose tubes, 2" piping and faucets. For Fuel Oil delivery the unit is equipped with power pump and complete one side, one hand controls.

...to each operating department Farrell renders a distinct engineering service

Truck tank fleet operators problems are many and vastly involved . . . Farrell's fleet engineering covers all . . . it is not confined to simply building tanks.

Farrell enters in the entire scheme . . . for the Sales and Distribution end; cooperation in determining tank gallonage suitable for overlapping and seasonable products; designing and working out attractive and distinctive units with advertising appeal.

For the Transportation end, Farrell analyzes travel conditions, co-relates these with capacities needed to be hauled; designs tanks of maximum pay-load capacity to come within road laws; works with engineering departments of truck or trailer builders in regards to wheels, strains, stresses, loads, lengths and a host of other requirements.

For the Mechanical and Shop end, Farrell cooperates with regards to service requirements; interchange of units and complete rechange from chassis to chassis.

For the Automotive Engineer, Farrell opens wide the doors of their vast plant, filled with skilled men and engineers as a place to work out and test their new ideas; design and create distinctive styles, painting, etc.

Within the Farrell plant Automotive Engineers will find an organization tuned to their ways of thinking—a group of pioneers who have advanced most of the modern improvements in truck tanks—a manufacturing unit embracing the latest practices of rolling, welding, testing, mounting, painting, etc.

A visit to the vast Farrell plant at Joliet, Illinois will disclose some very interesting developments...*especially the construction of the tank sections*—the outstanding advantage of Farrell Tanks . . .

The *flexible unit-tank construction* (original with Farrell) consists of forming a truck tank of a number of separate, welded, complete tanks (according to the capacities and number desired). These independent tanks are mounted on a sturdy steel, cushioned, underframe and are held together (not welded together) by strong, wide steel bands completely encircling the tanks.

Flexible unit-tank construction has several distinct meanings so far as Farrell's method of building is concerned—first and most important, it provides for the widest range of choice as to tank capacities, diameters, heights, widths, and lengths and permits the building of the tank, with any number of compartments, to the MAXIMUM PAY LOAD CAPACITY of your chassis. No restriction or small number of sizes or capacities to choose from as is so common with tanks constructed with patented features or die pressed heads. *No excess dead weight*, hence LOWEST COST per gallon capacity.

Flexible unit-tank construction gives advantages not found in any other tank—they result in a *longer tank life* for, *because of its design and assembly*, the tank rides rough roads without absorbing the vibration and jars that cause weld breakdowns, so common to solid tanks.

Cross leakage is impossible—vibration and road shocks cannot distort or cause tank strain—pulling loose or breaking tie rods eliminated—metal crystallization or breaking of welds impossible—accidental damage to one unit cannot put others out of service—if necessary, units can be replaced at as much as a 50% saving (in time, labor and material) over replacement or repair to solid tanks.

Write for picture folder and specifications

FARRELL MANUFACTURING COMPANY, — JOLIET, ILL.
Chicago — Detroit — Cleveland — Philadelphia — New York

175,000 Gallons of Gas Delivered Each Month by Two Trucks

The 1000-gallon tank truck of the Columbia Petroleum Co. This truck, with its 750-gallon companion truck, delivers from 175,000 to 200,000 gallons of gasoline a month

COLUMBIA, S. C.

GASOLINE hauling costs have been reduced by the Columbia Petroleum Co. here by installing large storage tanks at Service stations and by making half a load the minimum dump.

Two trucks are hauling from 175,000 to 200,000 gallons of gasoline each month out of the bulk plant.

Tanks at stations have a capacity of 500 or 1000 gallons. Gasoline is delivered on a schedule that calls for a dump every fifth day at most stations, and the maximum number of calls in a week is two.

The gasoline delivery equipment consists of the two trucks, one with a 1000-gallon tank, the other with a 750-gallon tank. The company also operates a tank truck for kerosine, another for fuel oil, and a stake truck for lubricating oils.

To obtain this economy in deliveries the company has concentrated its retail business on company owned or leased stations in Columbia. Only a few dealer accounts have been solicited outside the city, and this business has been confined to one good dealer on each main highway.

W. J. Keenan, president, purchased an interest in an oil company in Columbia in 1920, on his return from the World War. He had been in France in charge of the work of co-ordinating machine gun fire with the motor in airplanes.

This company was reorganized into the present Columbia Petroleum Co. As Mr. Keenan believed the trend was towards jobber control of stations his company began acquiring outlets, either through purchase of land or by long term leases. The stations in turn were leased to operators. Five stations now are still managed by the original operators.

The stations are leased at a rental varying from $45 to $200 a month. One station rents for much more as it includes an indoor and outdoor storage garage.

The chief advantage in leasing stations, Mr. Keenan found, is the transferring of credit difficulties from the jobber to the station operator. Station operators pay cash for goods received from the Columbia Petroleum Co., and they are responsible for any credit they extend.

To assist the operators in building business the company provides a supervisor and pays half of any sales promotional expense. The supervisor contacts all the stations, and cooperates with the operators in getting business. The supervisor also solicits commercial accounts.

Sales have been promoted through direct mail pieces and by personal solicitation. A woman has been employed twice to make a door to door canvass of individual car owners.

The city is zoned so that each station has its own marketing territory, and if the station operator desires his district is canvassed. A small souvenir is given by the canvasser at each call. Only once has she been refused an interview at a home.

A report is turned in by the canvasser for each call, and for a followup letter, written at the main office and signed by the station operator.

The canvasser carries a list of customers of the station for which she is working to personalize the calls so she will not give the same sales talk to customers and non-customers.

ADVERTISING PAGES REMOVED

Crude Production by Fields

By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A. P. I.

PRODUCTION SUMMARY

	Feb. 21	Feb. 14
Production east of Rockies	1,634,850	1,599,100
Increase		35,750
Total production in U. S.	2,165,250	2,127,700
Increase		37,550
Crude oil imports	117,000	134,145
Decrease		17,145
Total new crude supply	2,282,250	2,261,845
Increase		20,405

OKLAHOMA

	Feb. 21	Feb. 14
Allen Dome	12,600	12,800
Asher	700	700
Asher, West	8,500	8,450
Blackwell	2,750	2,750
Bowlegs	13,750	13,150
Braman	1,950	1,850
Bristow-Slick	12,500	12,100
Burbank	13,400	13,400
Carr City	14,800	10,650
Cromwell	4,800	4,800
Cushing	12,500	12,850
Davenport	900	900
Duncan Dist.	6,850	6,850
Earlsboro	17,600	17,900
Earlsboro, East	21,700	20,050
Earlsboro, S.	8,200	7,350
Fox	950	950
Garber	3,900	4,200
Graham	2,850	2,900
Healdton	10,450	10,200
Hewitt	6,050	6,050
Hubbard	1,000	900
Konawa	15,650	15,450
Little River	24,950	23,900
Little River, E.	9,550	10,250
Logan County	4,150	3,600
Maud	2,400	2,500
Mission	8,400	7,800
Oklahoma City	105,950	88,750
Okmulgee, N.	8,150	8,150
Okmulgee, S.	4,500	4,500
Osage (Outside Burbank)	22,550	22,450
Papoose	2,050	2,050
Pearson	550	550
Sasakwa	4,200	3,800
St. Louis	21,700	20,650
Schloem-Alechem	13,700	12,000
Searight	5,800	5,350
Seminole	13,600	14,500
Seminole, E.	1,950	1,900
Thomas	600	600
Tonkawa	5,150	5,000
Wewoka	8,700	10,700
Yale-Jennings	7,150	5,400
Others	32,450	32,650
Total, Okla.	502,550	474,250
Increase		28,300

KANSAS

Augusta-Fox Bush	3,100	3,100
Churchill	4,000	4,000
El Dorado-Towanda	13,250	13,200
Florence-Covert	850	800
Greenwood Co.	17,250	17,100
Oxford	2,450	2,400
Peabody-Elbing	1,600	1,600
Rainbow Bend	1,150	1,150
Russell	3,250	3,200
Sedgwick Co.	21,000	20,800
Voshell	22,250	26,900
Others	26,000	25,000
Total, Kans.	116,150	119,250
Decrease		3,100

NORTH LOUISIANA

Caddo, light	8,200	8,200
Caddo, heavy	2,850	2,750
Cotton Valley	1,900	1,900
De Soto and Red River	2,750	2,750
Haynesville	5,650	5,650
Holly	750	750
Homer	3,350	3,350
Sarepta Carterville	1,700	1,850
Urania	4,850	4,850
Zwolle	11,450	11,000
Others	1,450	1,500
Total, N. La.	44,900	44,550
Increase		350

ARKANSAS

Champagnolle	4,450	4,450
El Dorado	3,800	3,800
Lisbon	750	750
Nevada	1,000	1,000
Smackover, light	4,400	4,450
Smackover, heavy	33,500	33,450
Stephens	850	850
Others	1,100	1,100
Total, Ark.	49,850	49,850

ROCKY MOUNTAIN

Wyoming

Big Muddy	1,950	1,900
Elk Basin	700	700
Grass Creek	2,000	2,100
Labarge	1,550	1,850
Lance Creek	200	150
Lost Soldier	4,350	4,300
Oregon Basin	1,900	1,900
Rock River	1,950	2,000
Salt Creek	26,900	25,250
Others	4,050	3,750
Total, Wyo.	45,550	43,900
Increase		1,650

Montana

Cat Creek	1,100	1,100
Pondera	2,300	1,950
Sunburst	4,500	4,500
Others	1,450	1,450
Total Mont.	9,350	9,000
Increase		350

Colorado

Florence	400	400
Fort Collins	1,050	1,100
Moffat (Craig)	1,100	1,100
Others	1,750	1,750
Total, Colo.	4,300	4,350
Decrease		50

New Mexico

Artesia	650	600
Bal. Eddy Co.	100	100
Hobbs High	31,800	32,700
Bal. Lea Co.	6,750	6,250
Hogback	450	450
Rattlesnake	1,100	1,150
Table Mesa	100	100
Total, N. M.	40,950	41,350
Decrease		400
Total, Rocky Mountain	100,150	98,600
Increase		1,150

TEXAS (OUTSIDE GULF COAST)

Panhandle District

Carson Co.	4,150	3,750
Gray Co.	41,350	40,600
Hutchinson Co.	7,750	8,750
Wheeler Co.	400	300
Others	300	300
Total, Panhandle Tex.	53,950	53,700
Increase		250

NORTH TEXAS

Archer Co.	12,500	12,550
Burkburnett	7,600	7,600
Electra	8,700	8,700
Iowa Park and K. M. A.	3,750	3,750
Montague-Cooke	6,200	6,200
Wilbarger	10,000	10,500
Young Co., No.	8,400	8,500
Others	1,550	1,500
Total, N. Tex.	58,650	59,350
Decrease		700

West Central Texas

Brown Co.	3,750	3,750
Callahan Co.	1,500	1,500
Coleman Co.	850	900
Eastland-Desdemona	3,850	3,850
Jack Co.	900	950
Palo Pinto Co.	400	400
Shakleford Co.	3,800	3,850
Stephens Co.	4,600	4,600
Thockmorton Co.	550	550
Young Co., So.	2,500	2,500
Others	1,250	1,300
Total, West Cent. Tex.	23,950	24,150
Decrease		200

West Texas

Crane and Upton Co.'s	24,300	24,600
Crockett Co.	1,900	1,950
Ector Co.	6,600	6,500
Howard Co.	26,550	27,150
Jones Co.	1,200	1,200
Mitchell and Scurry Co.'s	2,000	2,000
Reagan Co.	29,150	31,550
Winkler Co.	50,050	52,000
Yates	92,250	88,700
Bal. Pecos Co.	3,400	3,500
Others	6,800	6,350
Total, West Tex.	244,200	245,500
Decrease		1,300

East Central Texas

Boggy Creek	2,500	2,500
Corsicana-Powell	4,800	4,850
Currie	300	300
Mexia	3,800	3,800
Nigger Creek	200	150
Richland	100	100
Rusk and Gregg Counties	25,300	12,150
Van Zandt	30,600	30,550
Wortham	600	600
Others	50	550
Total, E. Cen. Tex.	68,350	55,050
Increase		13,300

Southwest Texas

Chapmann Abbot	5,800	6,000
Dale	250	250
Darst Creek	30,750	32,750
Laredo Dist.	13,500	13,500
Luling	9,650	9,650
Lytton Spgs.	700	700
Salt Flat	16,300	16,400
Somerset	1,300	1,300
Others	550	550
Total, So. W. Texas	78,800	81,100
Decrease		2,300
Total, Texas (Outside Gulf Coast)	527,900	518,850
Increase		9,050

GULF COAST

Coastal Texas

Barbers Hill	22,600	23,000
Batson	950	900
Big Creek	2,800	2,750
Blue Ridge	1,300	1,300
Boling	700	900
Damon Mound	600	550
Esperson	2,150	2,200
Fannett	700	800
Goose Creek	4,200	4,200
Hankamar	2,550	2,550
Hull	6,300	6,300
Humble	9,700	10,250
Moss Bluff		200
No. Dayton	450	600
Orange Co.	1,900	2,200
Orchard	2,200	2,200
Pettus	7,300	7,450
Pierce Junct.	9,050	8,400
Port Neches	1,500	1,550
Raccoon Bend	8,900	8,350
Refugio Co.	33,500	34,000
Saratoga	600	1,100
Somerville	1,500	2,250
Sour Lake	2,000	2,000
So. Liberty	2,500	2,550
Spindletop	12,400	12,450
Sugarland	12,000	11,900
West Columbia	4,350	4,000
Others	2,500	1,500
Total, Coastal Texas	157,200	158,900
Decrease		1,700

Coastal Louisiana

Edgerly	800	500
Evangeline	650	650
Hackberry, E.	2,450	2,600
Hackberry, Old	800	850
Lake Barre	2,900	3,400
Dockport	4,600	4,300
Port Barre	1,650	1,700
Sulphur Dome	2,000	2,100
Vinton	5,950	5,800
White Castle	950	950
Others	3,700	3,250
Total, Coastal La.	26,450	26,100
Increase		350
Total, Gulf Coast	183,650	185,000
Decrease		1,350

CALIFORNIA

Dominguez	11,300	11,100
Elwood-Goleta	31,500	31,600
Huntington Beach	21,300	21,700
Inglewood	15,000	15,000
Kettleman Hills	27,000	27,000
Long Beach	94,300	93,600
Midway-Sunset	53,000	53,000
Playa del Rey	32,500	33,000
Santa Fe Spgs.	71,000	70,400
Seal Beach	15,000	13,200
Ventura Ave.	45,000	45,500
Others	113,500	113,500
Total, Calif.	530,400	528,600
Increase		1,800

EASTERN

(Not including Mich.)	100,350	99,500
Increase		850

MICHIGAN

Mt. Pleasant	7,150	7,050
Muskegon	2,000	2,000
Saginaw	200	200
Total, Mich.	9,350	9,250
Increase		100

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations, Week Ended Feb. 20 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Feb. 20
Plants Reporting.....	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)..	94,000	161,700	106,100	82,000	77,000	520,800
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs..	53,392 — 11.4	88,432 + 3.0	74,951 + 11.6	32,335 — 0.6	40,812 + 24.5	289,922 + 4.1
Da. Av. Other Oils...	3,833 — 25.6	5,344 — 19.7	2,473 — 17.8	264 — 24.4	14,131 — 16.8	26,045 — 19.0
GASOLINE—Gallons						
Stocks, Feb. 13.....	29,613,000	43,385,000	33,482,000	12,268,000	6,515,000	125,263,000
Prod. 2-13 to 2-20....	10,122,000 — 3.5	15,429,000 + 5.6	10,842,000 + 4.8	2,886,000 — 3.0	5,333,000 — 2.1	44,612,000 + 1.7
Ship. 2-13 to 2-20....	10,983,000 + 5.9	13,470,000 — 16.2	7,821,000 — 10.7	692,000 — 74.1	4,823,000 — 11.9	37,789,000 —12.8
Stocks, Feb. 20.....	28,752,000 — 2.9	45,344,000 + 4.5	36,503,000 + 9.0	14,462,000 + 17.9	7,025,000 + 7.8	132,086,000 + 6.1
Ratio Sales to Prod...	108.5%	87.3%	72.1%	24.0%	90.4%	84.7%
KEROSINE—Gallons						
Stocks, Feb. 13.....	9,140,000	14,481,000	2,523,000	23,000	449,000	26,616,000
Prod. 2-13 to 2-20....	1,736,000 — 22.7	2,094,000 + 15.9	1,408,000 + 2.5	19,000 — 63.5	373,000 — 21.8	5,630,000 — 5.5
Ship. 2-13 to 2-20....	1,701,000 — 32.0	1,772,000 — 3.6	1,341,000 + 24.3	16,000 — 67.3	351,000 — 17.0	5,181,000 — 12.0
Stocks, Feb. 20.....	9,175,000 + 0.4	14,803,000 + 2.2	2,590,000 + 2.7	26,000 + 13.0	471,000 + 4.9	27,065,000 + 1.7
Ratio Sales to Prod...	98.0%	84.6%	95.2%	84.2%	94.1%	92.0%
STOVE DISTILLATE—Gallons						
Stocks, Feb. 13.....	3,462,000	4,885,000	696,000	82,000	.....	9,125,000
Prod. 2-13 to 2-20....	483,000 + 26.1	975,000 + 11.3	469,000 + 85.4	32,000 — 28.9	22,000 — 51.1	1,981,000 + 23.7
Ship. 2-13 to 2-20....	525,000 + 3.8	930,000 +130.2	293,000 — 32.8	29,000 — 6.5	22,000 — 60.0	1,799,000 + 25.6
Stocks, Feb. 20.....	3,420,000 — 1.2	4,930,000 + 0.9	872,000 + 25.3	85,000 + 3.7	....	9,307,000 + 2.0
Ratio Sales to Prod...	108.7%	95.4%	62.5%	90.6%	100.0%	90.8%
GAS OIL—Gallons						
Stocks, Feb. 13.....	3,282,000	28,267,000	2,111,000	4,997,000	6,535,000	45,192,000
Prod. 2-13 to 2-20....	401,000 — 36.0	1,368,000 — 14.2	873,000	613,000 — 9.3	2,163,000 — 2.7	5,418,000 + 5.9
Ship. 2-13 to 2-20....	608,000 + 2.4	1,275,000 — 36.5	604,000 + 59.8	372,000 — 68.8	2,374,000 + 10.4	5,233,000 — 17.3
Stocks, Feb. 20.....	3,075,000 — 6.3	28,360,000 + 0.3	2,380,000 + 12.7	5,238,000 + 4.8	6,324,000 — 3.2	45,377,000 + 0.4
Ratio Sales to Prod...	151.6%	93.2%	69.2%	60.7%	109.8%	96.6%
FUEL OIL—Gallons						
Stocks, Feb. 13.....	17,597,000	50,682,000	63,343,000	15,536,000	19,833,000	166,991,000
Prod. 2-13 to 2-20....	3,672,000 — 9.0	4,756,000 — 8.2	7,706,000 + 0.7	4,534,000 — 1.2	4,877,000 + 15.9	25,545,000 — 0.4
Ship. 2-13 to 2-20....	13,059,000 +335.2	4,624,000 +166.1	6,942,000 — 6.0	5,204,000 + 23.1	3,491,000 — 6.7	33,320,000 +65.8
Stocks, Feb. 20.....	*8,210,000 — 53.3	50,814,000 + 0.3	64,107,000 + 1.2	14,866,000 — 4.3	21,219,000 + 7.0	159,216,000 — 4.7
Ratio Sales to Prod...	355.6%	97.2%	90.1%	114.8%	71.6%	130.4%

Gasoline Produced by Various Methods, Week Ended February 20

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	5,719,000	56.5	9,749,000	63.2	7,294,000	67.3	2,565,000	88.9	1,764,000	33.1	27,091,000	60.7
Cracked.....	3,302,000	32.6	4,341,000	28.1	2,434,000	22.4	203,000	7.0	2,595,000	48.6	12,875,000	28.9
Natural.....	1,101,000	10.9	1,339,000	8.7	1,114,000	10.3	118,000	4.1	974,000	18.3	4,646,000	10.4
Total.....	10,122,000		15,429,000		10,842,000		2,886,000		5,333,000		44,612,000	

*8,148,000 Gallons transferred to charging stock.

+ or — columns are % change over previous week.

Mid-Continent Gasoline Shipments Drop 5,000,000 Gallons

Staff Special—By Telegraph

TULSA, Feb. 23

GASOLINE shipments from Mid-Continent refineries reporting weekly operations to NATIONAL PETROLEUM NEWS were lower in the week ended Feb. 20 than in any previous week this year. Shipments dropped 5,500,000 gallons last week and standing at 37,789,000 gallons, were approximately 5,000,000 gallons under shipments in the similar period last year.

Daily average crude runs increased 11,432 barrels but gasoline production was up only 745,000 gallons. The large drop in shipments, however, caused stocks of gasoline to jump 6,823,000 gallons. At the same time gasoline stocks still remained well under the level of a year ago. On Feb. 21, 1930 they totaled 155,157,000 gallons and on Feb. 20, 1931, 132,086,000 gallons.

A 326,000 gallon decrease in kero-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Feb. 20. Change in stocks figures from Jan. 23.

	Gallons
GASOLINE	
Production	168,756,000
Shipments	162,640,000
Net change in stocks	+6,116,000
Ratio sales to production	96.4%
KEROSINE	
Production	21,680,000
Shipments	21,648,000
Net change in stocks	+32,000
Ratio sales to production	99.9%
STOVE DISTILLATE	
Production	9,138,000
Shipments	9,051,000
Net change in stocks	+87,000
Ratio sales to production	99.0%
GAS OIL	
Production	20,654,000
Shipments	23,725,000
Net change in stocks	—3,071,000
Ratio sales to production	114.9%
FUEL OIL	
Production	97,918,000
Shipments	106,972,000
Net change in stocks	—9,054,000
Ratio sales to production	109.2%

sine output offset to some extent a decrease of 709,000 gallons in shipments, with the result that kerosine stocks increased less than a half million gallons.

Stove distillate production was higher but shipments also showed substantial increase and stocks increased only 182,000 gallons.

Gas oil shipments were lower with production and stocks showing small increases.

Fuel oil shipments increased more than 5,000,000 gallons. Transfer of 8,148,000 gallons of fuel oil to charging stock accounted for more than half of the 13,000,000 gallons increase in shipments which is shown in the compilation above. This also accounts for the large drop in fuel stocks. Production of fuel oil decreased 114,000 gallons.

Robert White Heads Humble's Sales

HOUSTON, Feb. 21.—Announcement is made by Humble Oil & Refining Co., that March 1 Robert White will join that organization as general sales manager. Malcolm J. Monroe will become assistant sales manager. Mr. White was formerly sales manager of the Valvoline Oil Co., New York.

The Humble will then begin marketing its new premium gasoline to be known as "Esso," which will replace its earlier "Ethyl Flashlike" premium grade. Although containing Ethyl fluid, it is announced that "Esso" will have other distinctive premium qualities.

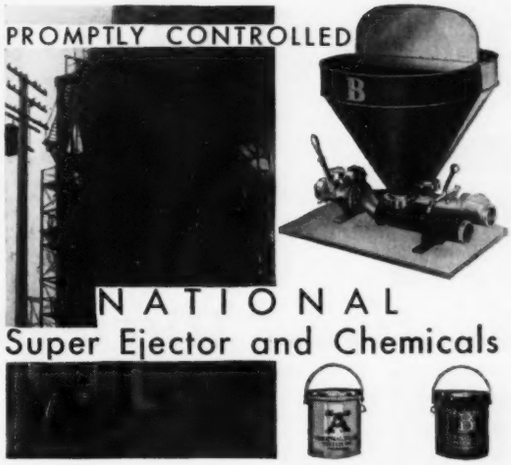
"Humble Flashlike" will continue to be the company's standard grade of white gasoline.

Bill Would Segregate Marketing

HOUSTON,, Feb. 21.—A new measure proposing segregation of retail marketing from other branches of the petroleum industry in Texas has been prepared for introduction in the present legislature. It will be offered by segregationists as a substitute for bills previously introduced in both houses. The earlier bill included natural gas companies and gas pipelines in the ban sought, but the new measure would be made to apply exclusively to the petroleum industry.

Exports of gasoline to the Netherlands gained 20,000 barrels the first half of 1930 over the first half of 1929. Shipments were 998,750 barrels and 776,700 barrels respectively.

The United States received during the first half of 1930 nearly 550,000 barrels of crude oil from Ecuador.



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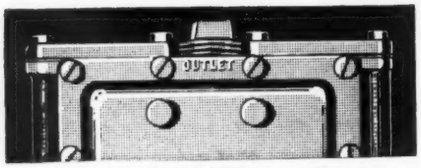
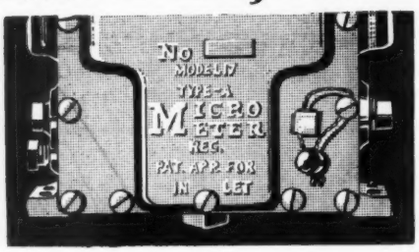
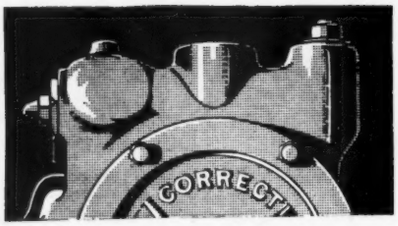


positive displacement **Micro-Meter**





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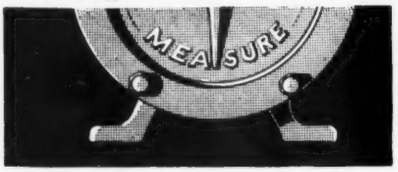
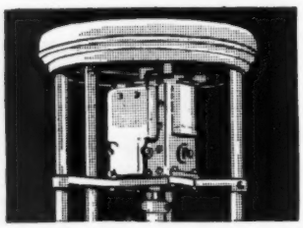
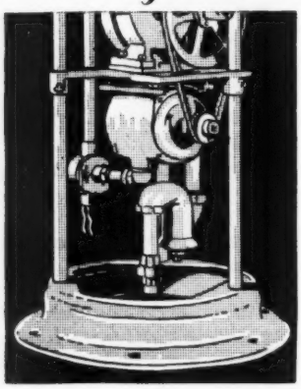
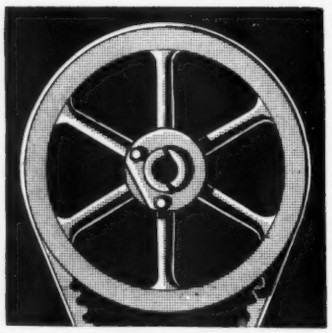




simplicity in **Construction . . . . .**





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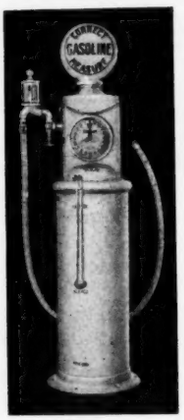
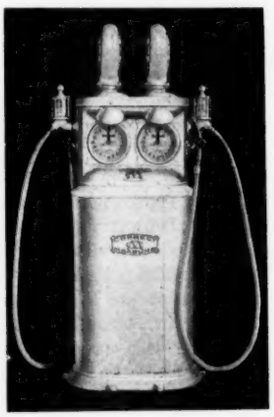


Hand Model

Electric Model



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Refinery - Tank Wagon Markets

Spot Buying of Gasoline Is Light; Prices Fall in Western Markets

ALTHOUGH weather is generally favorable for heavy consumption of gasoline, spot buying was light in most of the leading markets the last week. Activity in jobber buying was reported from only the New York district. Contract movement of gasoline is reported by refiners as satisfactory.

In the Chicago resale market and in Oklahoma prices have moved downward but even at lower prices spot buying has been confined to current needs of distributors.

Several factors have been acting against the spot market. In the East the Standard Oil Co. of New York has reduced the tank wagon price of gasoline, although an advance was expected because leading refiners more than a week ago advanced their tank car markets.

There have been rumors of tank wagon and service station price reductions in the Middle West but only local changes have taken place. Jobbers are hesitant to stock gasoline above current requirements in the face of these rumors.

The future of proration and the development in the new East Texas oil fields have been unsettling factors in the Mid-Continent gasoline market.

Export markets are still being hurt by low gasoline prices abroad.

There has been little buying of natural gasoline but prices have remained steady.

Kerosine demand has also been light except in the East where demand has been good. Prices have fallen in the Mid-Continent but have been generally steady in other markets.

Demand for furnace oils has held up in the East. In the Middle West the mild weather has retarded movement, and prices have been shaded in some quarters.

Although there has been some improvement in demand for industrial fuel oil, the improvement has been insufficient to stimulate prices. Some sellers in the Mid-Continent actually marked down their quotations.

Neutral oils are scarce in Pennsylvania and prices have continued their advance. Buying of Pennsylvania bright stocks was reported to be increasing at unchanged prices.

Wax markets continue quiet.

Chicago Gasoline Market Quiet; Prices Recede

Staff Special
CHICAGO, Feb. 21

THE Chicago resale market was comparatively quiet in the week ended Feb. 21. Spot demand for all products was only fair and prices for gasolines and some grades of heavy oils were lower. Movement of gasoline on contracts was reported satisfactory by most sellers.

The announcement of a reduction of 1-cent in discount margins to tank wagon gasoline buyers in Standard Oil Co. of Indiana territory was of considerable interest to the local trade but had no effect on the general tank car market. Considerable talk was heard relative to a reduction in retail gasoline prices by the major companies but no confirmation of these rumors could be obtained.

Tank car gasoline buying was generally reported to be on the same basis that has prevailed for some time. Jobbers were interested in the market only to an extent that would take care of their current needs and apparently the bulk of this buying was being done on contracts. However, several tank car marketers who have been offering U. S. Motor at less than 4 cents since the first of the week reported doing a good spot business.

Prices for gasolines for prompt shipment continued to move lower and were off approximately 0.125 cent during the week. This was about the same rate of decline that has occurred in the last three or four weeks and brought the low of the price range for U. S. Motor under 4 cents for the first time in many years.

Most of the Chicago tank car marketers offered U. S. Motor for prompt shipment at 3.875 to 4 cents on Feb. 21 compared to a low of 4 cents on Feb. 16. Sales also were reported at 3.75 cents but these were not in sufficient quantity to be considered representative of the general price range.

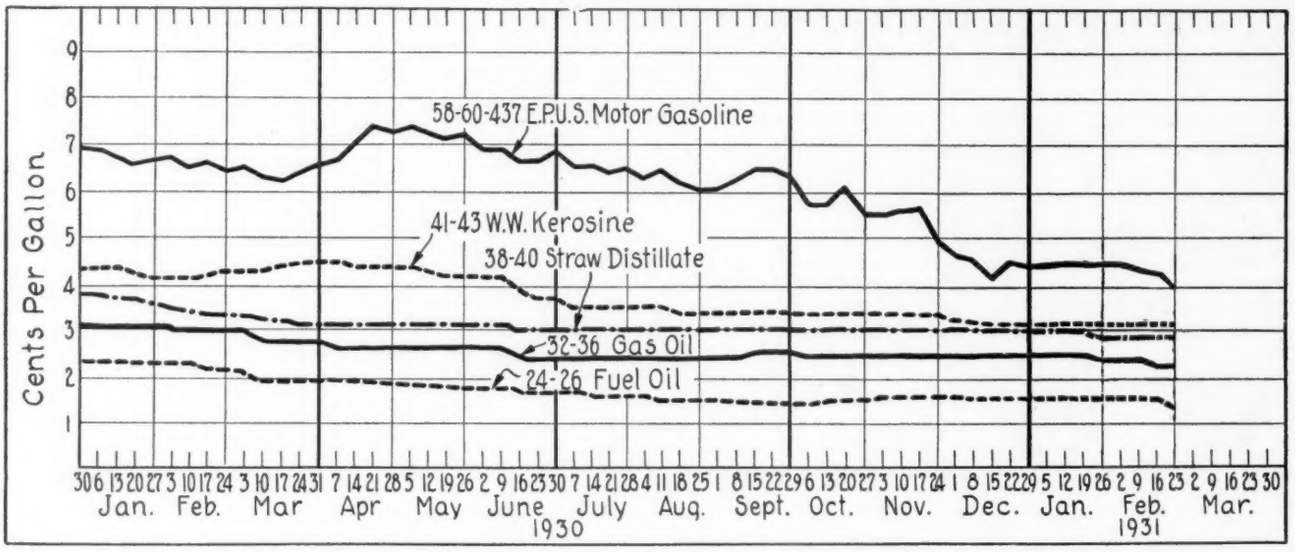
Marketers said their buying prices were at 3.75 cents in most instances, with material offered at 3.625 cents from one or two points.

The higher gravity gasolines also felt the lack of spot market buying and were offered at 0.125 cent lower in most sections. Some sales of 60-62, 400 e.p. gasoline were reported at 4 cents, but the bulk of sales were at 4.125 cents and up on Feb. 21.

The kerosine market remained in the doldrums but no great amount of change was apparent in prices. Distillates were quiet and prices were lower in several quarters.

The lack of cold weather over the middle west continued seriously to hamper demand for low cold test burning oils and several grades were more freely offered at lower prices. Gas oils were 0.125 cent lower on all grades. Fuel oils showed little change on the zero grades, and apparently no great amount of distress material was being offered.

Current Prices of Principal Mid-Continent Refined Products


58-60-437 E.P.U.S. Motor Gasoline
41-43 W.W. Kerosine
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Cents Per Gallon
Jan. Feb. Mar Apr May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1930
1931

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

S. O. New York Adopts New Pension Plan

NEW YORK

Standard Oil Co. of New York has adopted a new insurance and pension plan for its 45,000 employees to be administered by the Metropolitan Life Insurance Co.

The new plan provides for retirement of men in domestic service at the age of 65 and women at age 55. An annuity equal to 2 per cent of the annual salary multiplied by the number of years service of the company will be paid to pensioners until their death. On service prior to 1930 the 1930 rate of pay will be used in computing the allowance.

Employees in foreign service may be retired at a lower age, men at 55 and women at 50.

An insurance feature will provide for payment to the disabled and at death. Death benefits will approximate one year's salary.

An initial payment to the Metropolitan to start the plan was made entirely by the company. Future cost will be borne by both. Employees will pay one-fourth and the company three-fourths.

Employees who are dismissed or leave the company will receive all they have paid into the fund or may take a converted insurance policy under certain conditions. Employees who leave the company after 25 years service will not lose their pension. It will be paid as soon as he reaches the retirement age. Men who served their country during the war will be credited with continuous company service if they re-entered company employment promptly after discharge.

Employees of Standard subsidiaries are entitled to participate in the plan. These include, Magnolia Petroleum Co., General Petroleum Corp. of California, and the White Eagle Oil & Refining Corp.

Crude Stocks Down in January

NEW YORK, Feb. 21.—Following a decrease in December of nearly 3,000,000 barrels in pipeline and tank farm gross stocks of domestic crude oil, stocks declined further 956,000 barrels in January, according to the preliminary report of the American Petroleum Institute.

Shipments From Southern California

LOS ANGELES, Feb. 20.—Bulk petroleum shipments from southern California ports to Foreign and Atlantic Seaboard ports for week ended Feb. 14 totaled 873,436 barrels as compared with 1,274,229 barrels shipped to the same ports the previous week. Destination and quantity of shipments were as follows:

Destination	Crude	Gasoline	Diesel	Fuel	Total
Pacific For.	121,545	70,136	17,825	433,443	642,929
Atlantic Dom.	.....	153,617	76,870	.....	230,487
Atlantic For.	.....	.....	.....	.....	.....

Prices 10 Years Ago
Feb. 21, 1921

	Oklahoma	Penna.
58-60 U. S. Motor	13.50-14.00c	19.00-20.00c
80-84 Natural	9.00-10.00c	.....
Kerosine (42-43 Okla.; 47 w. w. Pa.)	4.75-5.25c	11.00-11.50c
Fuel Oil (24-26 Okla.; 36-40 Pa.)	$0.65-$0.70	4.75-5.00c
Crude (Okla. 35-35.9)	$1.75	$3.25
Chicago tank wagon (no state tax)		23.00c

Prices A Year Ago
Feb. 24, 1930

	Oklahoma	Penna.
58-60 U. S. Motor	6.4468c	7.50-7.75c
Grade A Natural	5.50-5.625c	.....
Kerosine (Okla. 41-43; Pa. 47 w. w.)	4.125-4.375c	6.25-6.50c
Fuel Oil (Okla 24-26; Pa. 36-40)	$0.875-$0.925	4.625-5.00c
Crude (Okla. 35-35.9)	$1.17	$2.75
Chicago tank wagon (including 3c tax)		17.00c

Mid-Continent Refinery Markets

Gasoline Price Structure Moves Down

Staff Special

TULSA, Feb. 21

GASOLINE prices continued to drift toward lower levels in virtually all parts of the Mid-Continent the last week. In fact prices of practically all commodities suffered rather severe setbacks. Volume of shipments of all commodities, with the possible exception of fuel oils, was holding up remarkably well, according to reports, and traders were at a loss to understand the downward movement of prices.

There was an unusually large amount of depressing talk going the rounds as a result of the extremely unsettled crude oil situation and the possibilities of the new East Texas field. These factors were credited to a large extent with depressing markets unduly to their present condition.

Shipments of gasoline were reported exceptionally good from all sides. They were far above the expectations of many refiners. Apparently contracts accounted for the bulk of the movement, however, since open market buying was almost wholly lacking.

Competition was keen for the small amount of open market gasoline orders available. Distress gasoline in the Oklahoma City district was credited with initiating the price reductions which, by the end of the week, had spread to all districts of the Mid-Continent except Louisiana and Arkansas.

Sales of U. S. Motor gasoline were reported at prices from 3.625 cents up to 4.50 cents by Oklahoma refiners. In most instances grades of gasoline which sold as high as the latter figure tested better than ordinary U. S. Motor. The bulk of sales were reported at 3.875 to 4.25 cents Feb. 21. This range represents a reduction of 0.125 cent on the low end and 0.25-cent on the high end from prices prevailing early in the week.

North Texas, West Texas and Kansas refiners lowered their U. S. Motor prices in line with Oklahoma. Lack of export buying in Texas caused the higher gravity gasolines to be offered at or near U. S. Motor prices in many instances. Several refiners said they could get no more than 0.125-cent premium for their 390 and 400 end point gasolines.

Natural gasoline prices were steady most of the week although activity was practically at a standstill. Considerable distress gasoline began to appear in the market toward the end of the week, however, and prices of all grades were off 0.125 to 0.25 cent.

Small lots of grade AA and grade BB were sold Feb. 19 and 20 at 2.75 cents and 3.25 cents, respectively. The lower prices attracted some large lot buying but most of it was done on a market-date-of-shipment basis. Continued mild weather throughout the middle west retarded shipments of burning oils still further. There was added improvement in the demand from industrial buyers but their purchases failed to take enough of the surplus oil off the market to keep prices from slipping.

The lighter burning oils, kerosine and distillate, were offered quite generally 0.125 to 0.25 cent under prices prevailing a week ago. Heavy fuels were quoted 2.5 to 10 cents a barrel lower.

Several Oklahoma refiners lowered their prices for neutral oils and cylinder stocks. Low cold test bright stocks were quoted nearer the prices for the higher cold test stocks. Demand, refiners said, indicated compounders already were preparing for their spring and summer motor oils.

There was no change in the wax situation in the Mid-Continent. One or two refiners remained out of the market; others quoted 2 cents a pound, f.o.b. refinery, for white crude scale.

Signal Oil Buys California Refinery, Stations

LOS ANGELES, Feb. 20.—Arrangements are being completed whereby Signal Oil and Gas Co. will take over the refining and distributing facilities of United States Refining Co. Ltd. Information as to the terms of the transaction is not available but it is understood that it will involve a cash payment in addition to an exchange of stock.

The refining company has approximately 600 retail distributing outlets throughout California and, during 1930, showed an aggregate gasoline distribution of 18,796,000 gallons. Its products are marketed under the trade names of "Purr-Pull" gasoline and "Purr-Lube" oils.

While Signal has considerable potential crude reserves from a production standpoint, its principal source of revenue is derived from six absorption plants in California that recover approximately 93,000 gallons of gasoline daily. The company has important holdings in Maricopa Flats, Belridge, Lost Hills, Signal Hill and Kettleman Hills, in addition to other semi-proven acreage.

The company also has natural gasoline plants in Bristow, Okla.,—daily net output of 2500 gallons daily—and in the Big Lake field of Texas—daily net output 45,000 gallons daily.

S. B. Mosher is president of the company, and as such has been largely responsible for its rise to a place of importance in the California industry. When it becomes a complete integrated unit with the acquisition of refining and distributing facilities, this company promises to become an even more important factor on the Pacific Coast.

Retiring from his duties as president of U. S. Refining Co., it is understood that Carl J. von Bibra will again engage in the refining and marketing business, using Exeter Oil Co., a producing company, as a basis. Mr. von Bibra is also president of Exeter.

A 5000-barrel refinery has been purchased with working capital released by the sale of U. S. Refining and it is understood that definite arrangements have been made to provide for the sale of products refined in the new plant.

Prairie O. & G. Co. Buys Kansas Distributor

TULSA, Feb. 21.—Prairie Oil & Gas Co. now has control of the Long Oil Co., of Manhattan, Kans., which owns a string of retail stations in north central Kansas. This is the first move of the Prairie to enter the distributing business, although its subsidiary, Producers & Refiners Corp., has been a marketer for years.

Some time back the Prairie made an offer of $55 per share for the preferred stock of the company. The transaction was handled through a Manhattan bank and individual holders of the common stock gave the Prairie enough of this class to give it control, as an inducement to buy the preferred. About 90 per cent of the preferred has been turned in to the bank. The company incurred a deficit last year.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect February 23

	Price F.O.B. Group 3	*Price F.O.B. Point of Origin*	*If for Particular Destination*
Oklahoma	3.875–4.125	3.875–4.125	
Kansas	4.00 –4.25		S. O. Neb. & Indiana Territories, etc.
Kansas		4.125–4.50	Kansas only.
North Texas	3.875-4.00	3.875–4.00	
West Texas	3.875–4.00	3.875–4.00	
Louisiana-Arkansas	4.25 –4.50		Michigan, Ohio and Indiana.
Louisiana-Arkansas		4.75 –5.00	State or differential haul.
Indiana-Illinois	3.875–4.50	*	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Chicago Resale Market

CHICAGO, Feb. 21

THE Chicago market was comparatively quiet the last week. Spot demand was only fair for all products and gasoline and some grades of heavy oil were moved at lower prices.

Some sales of U. S. Motor were reported at 3.75 cents Feb. 21, but most sellers said that 3.875 cents was the lowest at which they would sell full specification goods. A fair amount of movement also was reported up to 4.25 cents.

Kerosines, distillates, gas and fuel oils were quiet in most quarters. Gas oils were freely offered at lower prices, while the other products stayed at practically unchanged levels.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts, such as North and West Texas, Arkansas, Louisiana, Indiana, Illinois, Kentucky, etc.

	Prices Feb. 23	Prices Feb. 16	Prices Feb. 9
58-60 U. S. Motor, 437 e.p.	3.875– 4.25	4.00 – 4.375	4.125– 4.50
†56-62 400-437 e.p. anti-knock gasoline	4.50 – 5.375	4.50 – 5.375	4.50 – 5.50
60-62 437 e.p. gasoline	4.00 – 4.375	4.125– 4.50	4.25 – 4.50
60-62 400 e.p. gasoline	4.125– 4.50	4.25 – 4.625	4.375– 4.75
64-66 375 e.p. gasoline	4.625– 5.00	4.75 – 5.125	4.875– 5.25
68-70 350-360 e.p. gasoline	4.875– 5.375	5.00 – 5.375	5.25 – 5.75
*Domestic Aviation Gasoline	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
41-43 w.w. kerosine	3.00 – 3.25	3.00 – 3.25	3.125– 3.25
42-44 w.w. kerosine	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
38-40 p. w. distillate	2.625– 2.75	2.625– 2.875	.....
38-40 straw distillate	2.625– 2.75	2.625– 2.75	2.75 – 2.875
32-36 ordinary dark gas oil	1.875– 2.125	2.00 – 2.25	2.00 – 2.25
32-36 dark zero gas oil	2.25 – 2.50	2.375– 2.625	2.375– 2.625
32-36 straw zero gas oil	2.50 – 2.625	2.50 – 2.75	2.50 – 2.75
28-30 zero fuel oil (per bbl.)	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
28-30 fuel oil (per bbl.)	$0.80 –$0.85	$0.80 –$0.85	$0.80 –$0.85
24-26 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
18-22 fuel oil, low sulfur (per bbl.)	$0.50 –$0.55	$0.50 –$0.55	$0.50 –$0.55
18-22 fuel oil, high sulfur zero (per bbl.)	$0.55 –$0.60	$0.55 –$0.60	$0.55 –$0.60
14-16 fuel oil (per bbl.)	$0.40 –$0.425	$0.40 –$0.45	$0.40 –$0.45

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Over 45% benzol equivalent. Prices represent quotations and sales.

THE weighted average method of reporting Oklahoma and Kansas gasoline prices has been discontinued. For high and low prices, see first page of Refinery Market Price Tables under the general heading: GASOLINE and NAPHTHA.

Gas Tax Upheld

CHICAGO, Feb. 21.—The Illinois three-cent gasoline tax law, passed in 1929, was held valid by the State Supreme Court in a decision handed down Feb. 18 in a suit against the Deep Rock Oil Corp., Chicago.

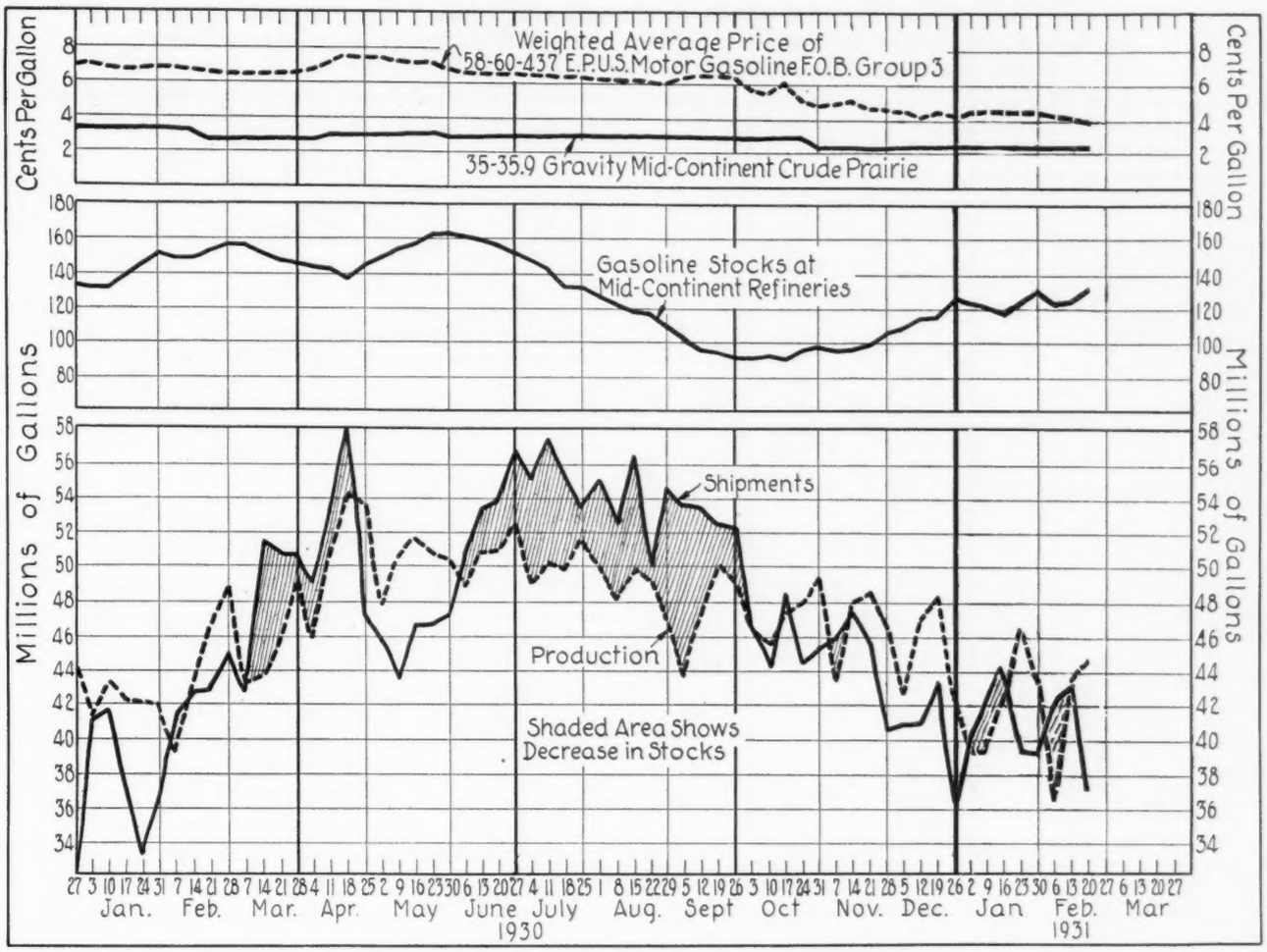
This suit arose from the resistance of the Deep Rock company to pay state taxes on the gasoline sold to the City of Chicago. It contended that the tax law was unconstitutional and that a city should not have to pay taxes on gasoline used for municipal purposes.

The Court held that the tax law was constitutional and that gasoline used for city purposes was taxable.

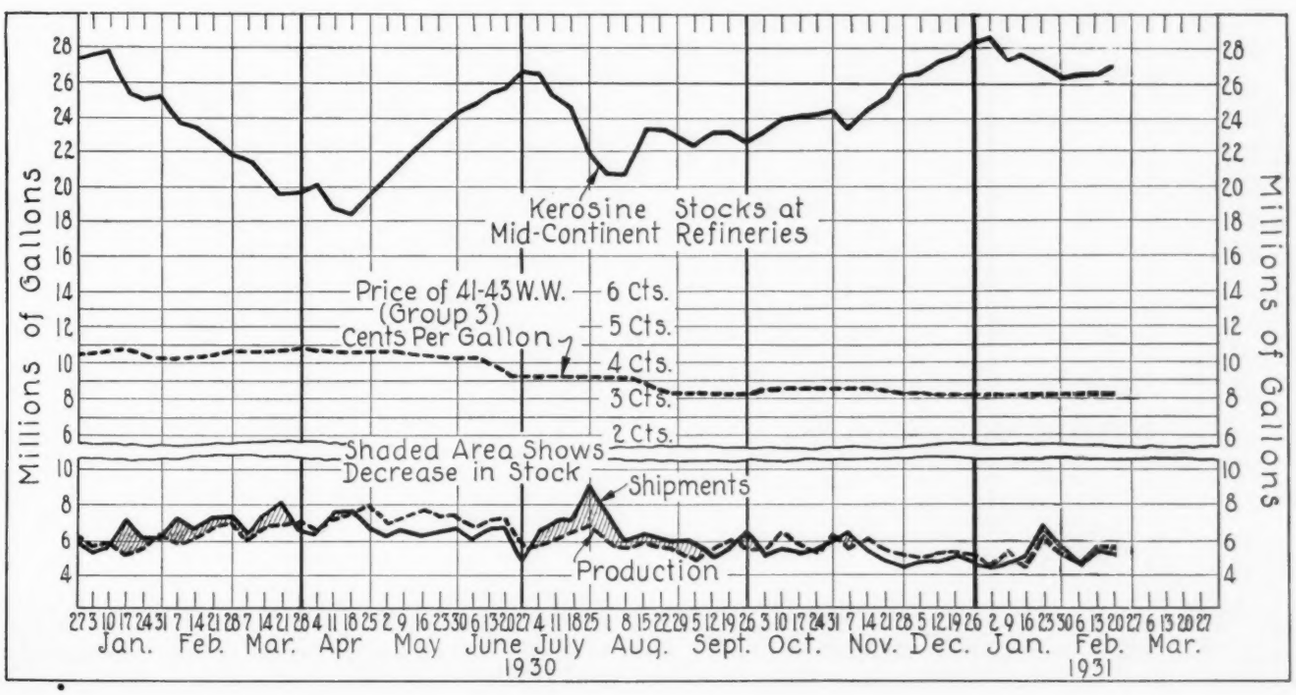
One half of the 93,000 barrels of kerosine imported by French Morocco the first half of 1930 came from the United States.

Barometer of Mid-Continent Refinery Market—Week Ending February 20

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 82



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Feb. 23	Prices Feb. 16	Prices Feb. 9
48-50 450 e.p. naphtha...	3.75	3.75 – 4.00	4.25
50-52 450 e.p. naphtha...	3.75	3.75 – 4.00	4.25
56-58 450 e.p. gasoline...	3.75 – 3.875	4.00	4.00 – 4.25
58-60 450 e.p. gasoline..	3.75 – 3.875	4.00	4.00 – 4.25
58-60 U.S. Motor 437 e.p.	3.875– 4.125	4.00 – 4.50	4.125– 4.50
60-62 437 e.p. gasoline...	4.00 – 4.25	4.375– 4.625	4.375– 4.625
60-62 400 e.p. gasoline...	4.125– 4.375	4.50 – 4.75	4.50 – 4.75
64-66 390 e.p. gasoline...	4.375– 4.75	4.75 – 5.00	5.00 – 5.25
64-66 375 e.p. gasoline...	4.75 – 5.00	5.00 – 5.25	5.25 – 5.50
68-70 350-360 e.p. gasoline	5.00 – 5.50	5.25 – 5.50	5.50 – 5.75
‡Domestic Aviation Gasoline.....	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡Prices based on U. S Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
54-56 Naphtha.....	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
58-60 U.S. Motor 437 e.p.	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
60-62 400-410 e.p. gasoline	6.00 – 6.50	6.25 – 6.50	6.25 – 6.50
64-66 390 e.p. gasoline....	6.375– 6.75	6.375– 6.75	6.375– 6.75
68-70 350-360 e.p.....	7.00 – 7.75	7.25 – 7.75	7.25 – 7.75

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline

Ohio, delivery at any point.....	8.00	8.50	8.50

KANSAS (F. o. b. refinery Kansas destination)

58-60 U.S. Motor 437 e.p.	4.125– 4.50	4.25 – 4.50	4.50 – 4.75
60-62 437 e.p. gasoline....	4.25 – 4.625	4.50 – 4.75	4.50 – 5.00
60-62 400 e.p. gasoline....	4.50 – 4.75	4.75 – 5.00	4.75 – 5.25
64-66 375 e.p. gasoline....	5.00 – 5.25	5.25	5.50

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline....	3.75	4.00	4.00
58-60 450 e.p. gasoline....	3.75	4.00	4.00
58-60 U.S. Motor 437 e.p.	3.875– 4.00	4.00 – 4.25	4.00 – 4.375
60-62 400 e.p gasoline....	4.125– 4.25	4.375– 4.625	4.50 – 4.75
64-66 390 e.p. gasoline....	4.25 – 4.50	4.625– 4.75	5.00
64-66 375 e.p. gasoline....	4.50 – 4.75	4.75 – 5.00	5.25 – 5.375
68-70 350-360 e.p. gasoline	5.00 – 5.25	5.25	5.50 – 5.75

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	3.625– 3.75	3.75	4.00
58-60 437 e.p. gasoline....	3.625– 3.75	3.75	4.00
58-60 U.S. Motor 437 e.p.	3.875– 4.00	4.00 – 4.125	4.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e.p	5.00	5.00	5.00

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	4.75	4.75	4.75

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	9.25 –10.25	9.50 –10.75	10.00 –11.25
54-58 U.S. Motor, for outside state shipment....	8.00 – 9.25	8.00 – 9.25	8.50 – 9.50
58-61 375-400 e.p. gasoline	11.00 –12.00	11.00 –12.00	11.00 –12.00
42-45 Engine Distillate 445-480 e.p.....	8.00 – 9.00	7.50 – 8.50	7.50 – 8.50

NATURAL GASOLINE

(Note: End point of all grades, not over 375F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	3.125– 3.50	3.50	**3.50 – 3.75
Grade A, 72-79.9, 90% Recovery.....	3.625– 3.75	3.75	3.75
Grade BB, 84-92, 85% Recovery.....	**2.75	**3.00	**3.00 – 3.25
Grade B, 76-83.9, 85% Recovery.....	3.00	3.25	3.25
Grade C, 80-92, 78% Recovery.....	2.75	3.00	3.00 – 3.25

NORTH TEXAS (F. o. b. Breckenridge)

	Prices Feb. 23	Prices Feb. 16	Prices Feb. 9
Grade AA, 80-87.9, 90% Recovery.....	**3.125– 3.50	**3.50	**3.50 – 3.75
Grade A, 72-79.9, 90% Recovery.....	3.625– 3.75	3.75	3.75
Grade BB, 84-92, 85% Recovery.....	**2.75	**3.00	**3.00 – 3.25
Grade B, 76-83.9, 85% Recovery.....	3.00	3.25	3.25
Grade C, 80-92, 78% Recovery.....	2.75	3.00	3.00 – 3.25

NORTH LOUISIANA (F. o. b. Monroe District)

Grade AA.....	†3.50	†3.50 – 3.75	†3.50 – 3.75
Grade BB.....	†3.00	†3.00 – 3.25	†3.00 – 3.25
Grade C.....	†3.00	†3.00 – 3.25	†3.00 – 3.25

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending.....	5.25 – 5.75	5.25 – 6.00	5.25 – 6.25

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w. w. kerosine.....	4.75 – 5.00	4.75 – 5.00	4.875– 5.00
46 w.w. kerosine.....	5.00 – 5.25	5.00 – 5.25	5.125– 5.25
47 w. w. kerosine.....	5.25 – 5.375	5.25 – 5.375	5.25 – 5.375
300 mineral seal.....	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w. w. kerosine.....	3.00 – 3.25	3.125– 3.25	3.125– 3.25
42-44 w. w. kerosine.....	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50

KANSAS (F. o. b. refinery Kansas destination)

41-43 w. w. kerosine.....	3.25 – 3.50	3.25 – 3.50	3.50 – 3.75
42-44 w. w. kerosine.....	3.50 – 3.75	3.75 – 4.00	4.00 – 4.25

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w. w. kerosine.....	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
41-43 w. w. kerosine.....	2.875– 3.125	3.00 – 3.25	3.00 – 3.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w. w. kerosine.....	4.00	4.00	4.00
42-44 w. w. kerosine.....	4.25	4.25	4.25

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w. w. kerosine.....	4.00	4.00	4.00

CALIFORNIA (F. o. b. California refineries)

38-40 w. w. kerosine.....	4.75 – 6.00	4.75 – 6.00	4.75 – 6.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.		(Viscosity at 70° F.)	
200 No. 3 Assoc. Filt.....	†19.00 –20.00	†18.50 –19.50	17.50 –18.50
180 No. 3 Assoc. Filt.....	†17.50 –18.50	†16.00 –17.50	15.00 –16.00
150 No. 3 Assoc. Filt.....	†15.50 –16.50	†14.00 –14.50	11.50 –12.00

Note: Low cold test neutral oils are quoted approximately 6c per gal. higher than prices shown above.

	(Non Viscous)		
34 Grav. 330-340 Flash...	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis. Color		(Viscosity at 100° F.)	
100—No. 2.....	5.50	5.50	5.50
150—No. 3.....	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
150—No. 4.....	6.50	6.50	6.50
180—No. 3.....	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 4.....	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
180—No. 5.....	7.50	7.50	7.50
200—No. 3.....	9.75 –10.00	9.75 –10.00	9.75 –10.00
200—No. 4.....	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
200—No. 5.....	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
220—No. 3.....	11.50	11.50	11.50
220—No. 4.....	11.00	11.00	11.00
220—No. 5.....	10.00	10.00	10.00
240—No. 3.....	13.50	13.50	13.50
240—No. 4.....	12.50	12.50	12.50
240—No. 5.....	11.50	11.50	11.50
280—No. 3.....	15.00	15.00	15.00
280—No. 4.....	14.50	14.50	14.50
280—No. 5.....	13.50	13.50	13.50

Note: Quotations for 0 to 10 cold test neutral oils are 1 to 2 cents higher, depending on the grade.

†Prices nominal ††Only one refiner quoting *Quotations only

****Represents Both Sales and Quotations.**

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis. Color	Prices Feb. 23	Prices Feb. 16	Prices Feb. 9
	(Viscosity at 100° F., pour test 0)		
100—No. 2 Pale	5.50 – 6.25	*5.50 – 6.25	5.50 – 6.25
200—No. 3 Pale	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.75
500—No. 3½ Pale	10.00 –10.50	10.00 –10.50	10.00 –11.00
750—No. 4 Pale	11.50 –12.50	11.50 –12.50	11.50 –12.50
1200—No. 4 Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
2000—No. 4-5 Pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil	7.00 – 7.50	7.00 – 7.50	7.00 – 7.75
300—No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.75
500—No. 6 Red Oil	9.00 –10.00	9.00 –10.00	9.00 –10.00
750—No. 6 Red Oil	11.25 –11.75	11.25 –11.75	11.25 –11.75
1200—No. 5-6 Red Oil	13.50 –14.00	13.50 –14.00	13.50 –14.00
2000—No. 6 Plus Red Oil	15.50 –16.00	15.50 –16.00	15.50 –16.00

‡CALIFORNIA (F. o. b. California refineries)

Vis. Color			
	(Viscosity at 100° F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Cylinder stock prices represent quotations to domestic jobbers only).

190-200 Vis. D at 210° Brt. St.	23.00	25.00	25.00
150-160 Vis. D at 210° Brt. St., 0-10 cold test	17.50 –19.00	18.00 –20.00	18.00 –20.00
150-160 Vis. D at 210° Brt. St., 10-25 cold test	16.50 –17.00	17.00 –18.00	17.00 –18.00
150-160 Vis. D Brt. Stock, 25-40 cold test	16.00	16.00 –17.00	16.00 –17.00
150-160 Vis. E 210° Brt. St.	15.00 –16.00	16.00	16.00
600 St. Ref. Olive Green	5.50 – 6.00	7.50 – 8.00	7.50 – 8.00
600 St. Ref. Dark Green	4.50 – 5.50	6.00 – 8.00	6.00 – 8.00
Black Oil	4.00 – 5.00	5.00	5.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00
650 Steam Refined	12.25 –13.00	12.25 –13.50	12.50 –13.50
600 Flash	13.50 –15.00	13.50 –15.00	13.50 –14.00
630 Flash	19.25 –20.00	19.50 –20.00	19.50 –20.00
600 Warren E	12.50 –13.50	12.50 –13.50	12.50 –13.50
600 Oil City E	12.00 –13.00	12.00 –13.00	12.00 –13.00
600 D Filtered	†14.50 –15.00	†14.50 –15.00	†14.50 –15.00
Cold Test Stock, 140-150 vis. at 210°, 540-550 flash, No. 8 color, below 25 pour test	18.50 –19.00	18.00 –19.00	18.00 –19.00
No. 8 color, 25-35 pour test	17.00 –18.00	17.00 –18.00	17.00 –18.00
No. 8 color, above 35 pour test	17.00 –18.00	17.00 –17.50	17.00 –17.50

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale a.m.p.	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
124-126 white crude scale, a.m.p.	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

124-126 White Crude Scale, a.m.p.	2.00	2.00	2.00

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	3.125– 3.75	3.25 – 3.75	3.25 – 3.75
30-34 fuel oil	3.25 – 3.75	3.25 – 3.75	3.25 – 3.75
28-32 fuel oil	3.25 – 3.75	3.25 – 3.75	3.25 – 3.75

Note: Zero cold test fuel oils are quoted 0.25c to 0.50c higher than prices shown above.

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Feb. 23	Prices Feb. 16	Prices Feb. 9
38-40 straw distillate	2.75 – 2.875	2.75 – 3.00	2.75 – 3.00
36-38 straw distillate	2.50 – 2.75	2.625– 2.75	2.625– 2.75
32-36 straw gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 straw gas oil zero	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
32-36 dark gas oil	2.00 – 2.125	2.00 – 2.125	2.00 – 2.125
32-36 dark gas oil zero	2.25 – 2.50	2.375– 2.625	2.25 – 2.50
28-30 zero fuel oil(per bbl.)	$0.85 – 0.875	$0.85 – 0.875	$0.85 – 0.95
28-30 fuel oil (per bbl.)	$0.80 – 0.825	$0.80 – 0.825	$0.80 – 0.825
26-28 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
24-26 fuel oil (per bbl.)	$0.55 – 0.65	$0.60 – 0.70	$0.60 – 0.70
22-26 fuel oil (per bbl.)	$0.475– 0.55	$0.525– 0.575	$0.525– 0.575
18-22 fuel oil (per bbl.)	$0.425– 0.475	$0.45 – 0.50	$0.45 – 0.50
16-20 fuel oil (per bbl.)	$0.40 – 0.45	$0.425– 0.45	$0.425– 0.45
14-16 fuel oil (per bbl.)	$0.40 – 0.425	$0.40 – 0.425	$0.40 – 0.425

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	2.875– 3.25	3.00 – 3.25	3.00 – 3.25
36-38 straw distillate	2.75 – 3.00	2.875– 3.00	2.875– 3.00
32-36 straw gas oil	2.50 –2.625	2.75 – 2.875	2.75 – 2.875
18-22 fuel oil (per bbl.)	$0.55 – 0.65	$0.70 – 0.75	$0.70 – 0.75
10-14 fuel oil (per bbl.)	$0.475– 0.55	$0.55 – 0.65	$0.55 – 0.65

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	2.50 – 2.75	2.75	2.75 – 3.00
38-40 p.w.treated distillate	2.625– 3.00	3.00	3.00 – 3.25
32-36 gas oil, cracked	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
32-36 St. reduced gas oil	2.00 – 2.25	2.00 – 2.25	2.00 – 2.25
24-26 fuel oil (per bbl.)	$0.425– 0.45	$0.50	$0.50
20-24 fuel oil (per bbl.)	$0.40 – 0.45	$0.45	$0.45
18-22 fuel oil (per bbl.)	$0.35 – 0.40	$0.40	$0.40

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment

34-38 gas oil	2.00 – 2.25	2.00 – 2.25	2.125– 2.375
30-32 gas oil	1.75 – 2.00	1.875– 2.00	1.875– 2.125
28-30 zero gas oil	2.125– 2.375	2.25 – 2.50	2.25 – 2.50
18-22 fuel oil (per bbl.)	$0.375– 0.40	$0.40 –$0.50	$0.40 –$0.50

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	*3.25	*3.25	*3.25
32-36 gas oil, straw	*3.25	*3.25	*3.25
14-16 fuel oil (per bbl.)	$0.75 –$0.85	$0.75 –$0.85	$0.75 –$0.85

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	2.75 – 3.00	3.00	3.00
32-36 dark gas oil	2.75 – 3.00	3.00	3.00
28-30 gas oil	2.50 – 2.75	2.75	2.75
20-24 fuel oil (per bbl.)	$0.85 – 0.90	$0.90 –$0.95	$0.90 –$0.95
9-12 fuel oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.40 –$0.65	$0.40 –$0.65	$0.40 –$0.65
14-18 Bunker oil (per bbl.)	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
30-34 gas oil (per bbl.)	$0.85 –$1.15	$0.85 –$1.15	$0.85 –$1.15
27 Plus Diesel oil (per bbl.)	$0.75 –$1.05	$0.80 –$1.05	$0.80 –$1.05

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. refinery In tank cars ⅝c to ¾c per pound less.) Two refiners quoting.

Snow White	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
Lily White	6.125– 7.00	6.125– 7.00	6.125– 7.00
Cream White	5.125– 6.00	5.125– 6.00	5.125– 6.00
Light Amber	2.875– 3.00	2.875– 3.00	2.875– 3.00
Amber	2.625– 2.75	2.625– 2.75	2.625– 2.75
Red	2.00 – 2.50	2.00 – 2.50	2.00 – 2.50

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

(Per ton in car lots)

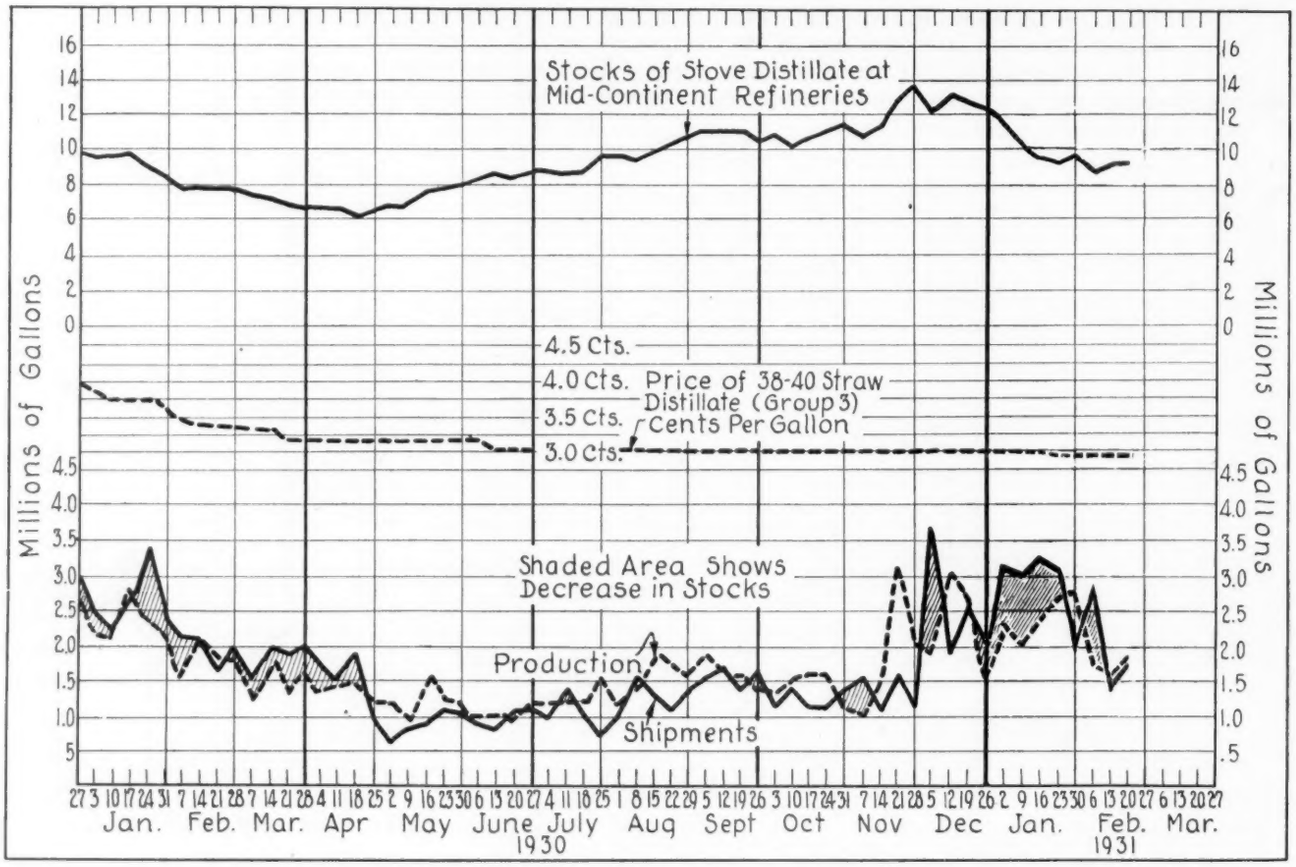
Lump	$4.50	$4.50 –$5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

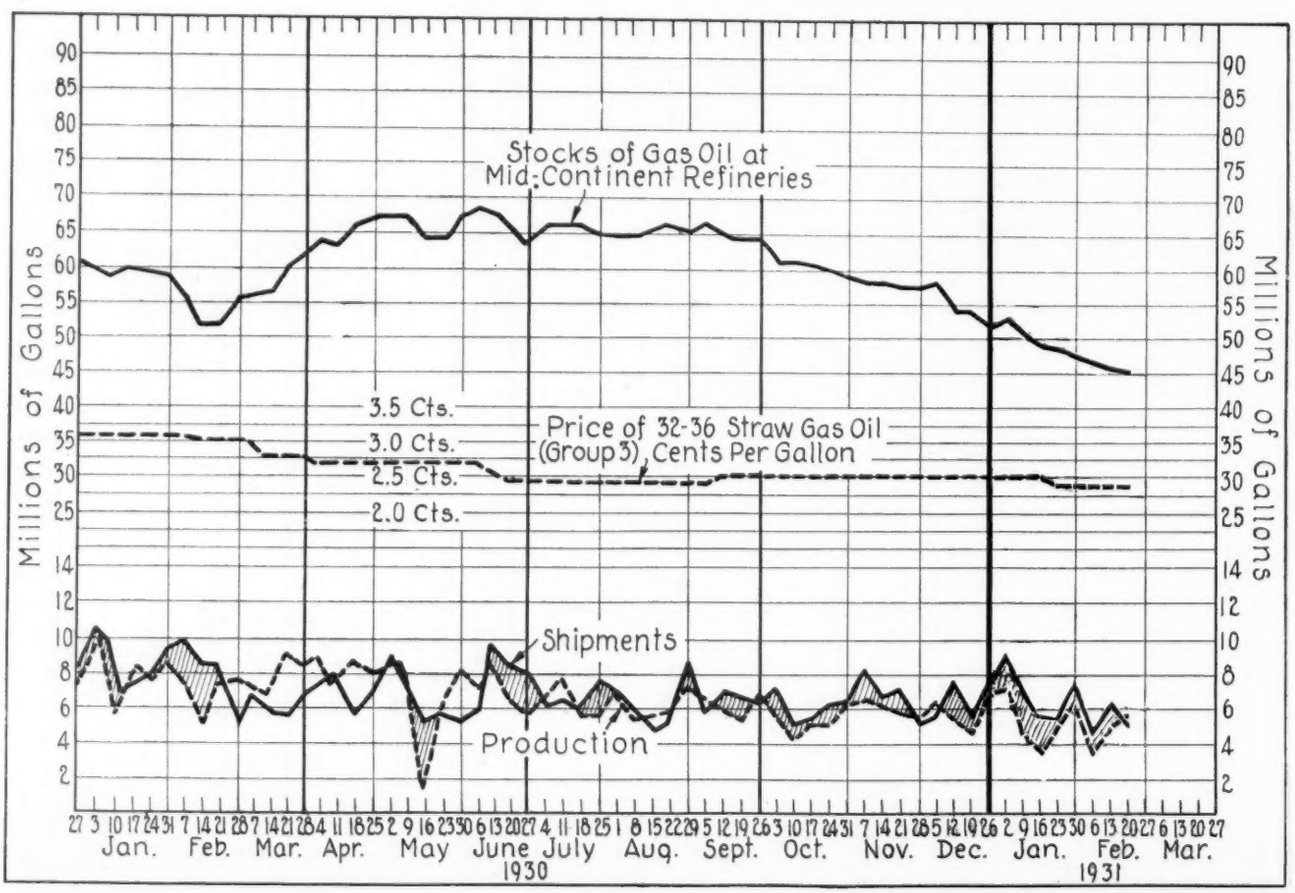
****Represents Both Sales and Quotations.**

†Prices nominal ††Only one refiner quoting *Quotations only

Barometer of Mid-Continent Refinery Market—Week Ending February 20

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
4.5 Cts.
4.0 Cts.
3.5 Cts.
3.0 Cts.
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
Shaded Area Shows Decrease in Stocks
Production
Shipments
Millions of Gallons
Jan. Feb. Mar. Apr May June July Aug Sept Oct Nov Dec Jan. Feb. Mar.
1930
1931


Stocks of Gas Oil at Mid-Continent Refineries
3.5 Cts.
3.0 Cts.
2.5 Cts.
2.0 Cts.
Price of 32-36 Straw Gas Oil (Group 3), Cents Per Gallon
Shipments
Production
Millions of Gallons
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
1930
1931

BARRETT
FAUCETS

Are Standard Equipment With Most Progressive Marketing Organizations

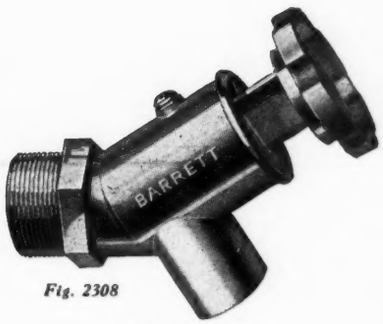


Fig. 2308

Fulflo (Gate) Faucet
1½ and 2 inches

FULFLO (GATE) FAUCET

These quick acting non-leaking, gate made faucets are especially designed for lubricating oils, kerosene and alcohol. Special seat washer is oil proof and there is nothing to gum, clog or get out of order. When closed a positive shut-off is assured. Made of white brass.

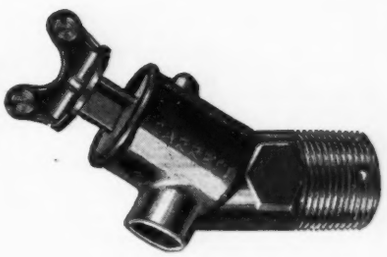


Fig. 2301

Fulflo Barrel Faucet
¾ inch

¾" SELF CLOSING SPRING TYPE FAUCET

This faucet delivers a concentrated stream and absolutely prevents dripping and splashing. A positive shut-off is accomplished automatically. Guaranteed to hold gasoline, kerosene and alcohol.

Fig. 2381

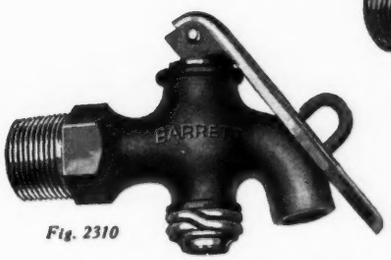


Fig. 2310

GROUND KEY LEVER LOCK FAUCET

Fabricated in durable red brass and equipped with Cadmium plated handle. A sturdy spring device maintains a constant even pressure on plug and automatically takes up wear. Sizes ½-⅝-¾-1-1¼ and 1½ inches.

Fig. 2373

¾" COMPRESSION LEVER LOCK FAUCET

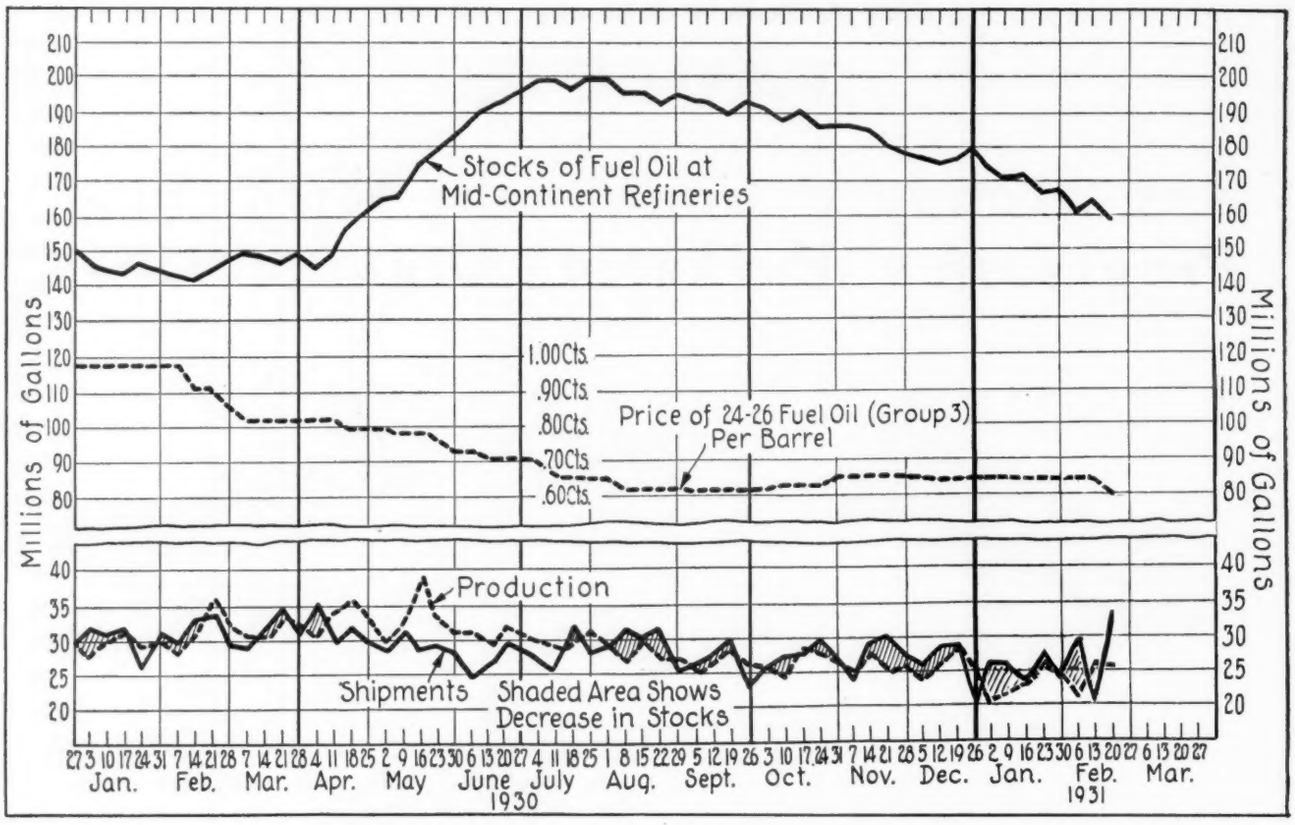
The spout of this faucet is especially designed for filling small bottles, oil cans, oil lamps, etc. It is made of red brass, with large heavy hexes for wrench grips. Handles gasoline, kerosene, turpentine, alcohol or oils perfectly without leaking.

Write for further information and literature. If you will state your needs, we will gladly forward specific details and recommendations covering your requirements.

THE CLEVELAND BRASS MANUFACTURING CO.
4606 Hamilton Avenue, Cleveland, Ohio

Barometer of Mid-Continent Refinery Market—Week Ending February 20

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Improved Business Seen for March

LOS ANGELES, Feb. 20 ALTHOUGH activity in California markets was at a low ebb the past week, indications are for increased business in both domestic and export branches early in March.

Better retail gasoline conditions along the Pacific Coast, combined with improved price conditions on the Atlantic Seaboard, were the principal factors leading up to this more optimistic attitude here.

While exporters believed U. S. motor gasoline could be bought at 5 cents f.o.b. San Pedro harbor, and while several inquiries were in the market seeking to close deals on bulk goods, there were no spot sales reported over the week.

Tanker rates on clean ships, which had ranged in the neighborhood of $0.42 per barrel, were reported advanced to $0.47 to $0.52. However, this factor was not considered likely to have an adverse effect on any firm business that might come into the market.

Quotations on unstabilized natural gasoline, 20 pound vapor pressure and higher, ranged at 4.75 to 5 cents per gallon in bulk lots, still too high to obtain business in competition with the Gulf.

Quotations were still being sought on approximately 280,000 barrels of fuel oil for the Antarctic whaling fleet. A major refiner is reported low bidder on this business with an offer to supply the lot at $0.58 per barrel, but the buyer is said to be holding for $0.55.

Unsatisfactory retail gasoline marketing conditions continue at San Francisco and Los Angeles. Independent refiners were reported delivering tank truck and trailer lots of motor fuel to points out of the San Francisco area at 13.50 and 14.50 cents, tax included.

This figure is only .25 cent higher than that maintained by the same companies in the neighborhood of their Southern California refineries. It is from 2.50 to 3.50 cents under the tank wagon delivery price of 17 cents maintained by major refiners in the San Francisco area.

For spot tank car movement within the state, gasoline was available at 9.25 to 10.75 cents, generally, with a few quotations above and below this spread. These figures are exclusive of tax.

Spot sales of motor fuel into adjoining states were few and far between the past week.

An independent reported the sale of one spot car of motor fuel at 8 cents. This was for delivery into Arizona. Another member of the trade failed to get some out-of-state business at 8.50 cents. The range of prices was generally thought to be 8.00 to 9.25 cents.

Natural gasoline in tank car lots was very inactive with average quotations a shade under those of last week. The trade believed this commodity could be bought at 5.25 to 5.75 cents and possibly as low as 5 cents.

Pennsylvania Markets

Neutral Oil Prices Advance

CLEVELAND, Feb. 23.—Neutral oils were still the outstanding commodity in the Western Pennsylvania market the last week. These oils with their continued scarcity have been the featured commodity for several weeks. Prices advanced from 0.50 cent to 1.50 cents per gallon.

Prices were largely nominal but a few sellers were still in the open market with one or two cars of material to offer. One broker was offering a car or two of the 180 No. 3 color neutral at a price slightly under the present market level. Several refiners were in the market to buy neutrals to fulfill their orders over the rest of the month. However, they met with little or no success.

One refiner reported receiving an open bid of 17 cents on the 150 No. 3 neutral and refused the business on the grounds of no stock to offer at any price.

Bright stock demand was picking up, according to reports from all sections of the field. Prices remained at the previous week's levels until late in the week when they advanced 0.50 cent. Low pour test stock was reported gradually losing ground to the summer higher pour grade.

Fuel oil demand was fair to good in several districts. Prices eased slightly the latter part of the week. Demand for the 36-40 gravity oil was reported good, but the price fell 0.125 cent. A broker is reported to have offered a few cars each of heavier oils at 3.125 cents. The general market price remained at 3.25 cents.

Demand for gasoline was sluggish. Some distress material was being offered at prices under those shown in National Petroleum News. Tho higher gravity gasolines were reported to be quiet. Prices on the 68-70, 350-360 e.p. gasoline eased off to 7 cents on the low of the range. The price of U. S. Motor was reported being shaded slightly on a firm offer and immediate delivery basis. A refiner reported hearing a broker was trying to buy 58-60 gas at 5.25 cents for resale.

Kerosine eased off slightly the beginning of the week but was steady the remaining part. Price of 45 w.w. kerosine was the only one to recede.

Cylinder stocks were quiet with few sales reported. The 600 steam refined was still being quoted at the same prices as a week ago.

Few wax sales were reported.

A big fleet of *modern* cars;
4 large, privately owned shops to keep them in condition;
18 years' specialized experience.
SPECIAL *services to shippers, described on request. Address*

NORTH AMERICAN CAR CORPORATION
327 S. LaSalle St., Chicago, Ill.
Tank Cars for Lease. Domestic and Export Terminals Chicago, Tulsa, New Orleans.

The *Sweetland* Filter as a Safe-guard

SINCE the basic value of lubricating oil is its freedom from anything even bordering on dirt or grit, all reasonable precautions for making it grit-free are desirable.

A special Sweetland Filter at the shipping station is an excellent safe-guard. Pass the oil through it on the way to the cars.

This is a precautionary step already in use.

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CHICAGO, 565 Washington Blvd. LONDON, W. C. 1, 150 Southampton Row
PARIS, T. L. Genter, Concessionaire, 63 Ave. des Champs Elysees.

THE MOTORIST IS HUMAN

Therefore sensitive to Color. Most remarkable is the lure that color gives to a product. Everywhere, for everything, color is used to Increase Sales.

DYKEM COLORS for gasoline come in a whole array of shades. Let us send you sample of that color which you feel fits your requirements best.

Correspondence Invited.

DYESTUFFS & CHEMICALS, INCORPORATED
11th & Monroe Sts., St. Louis, Mo.

Eastern Domestic Markets

Tank Wagon Cut Disturbs Eastern Market

Staff Special
NEW YORK, Feb. 21

EASTERN gasoline markets were disturbed the week ended Feb. 21 when the Standard Oil Co. of New York reduced its tank wagon price 1 cent throughout its territory. While the posted tank car prices remained unchanged, the margin between these prices and the tank wagon prices has become so narrow that the former was under considerable stress.

The reason given for this reduction at a time when an advance was expected, was reported to have been that a competitor had given an additional 1 cent discount to dealers. The change has put the company's gasoline market structure back on the same basis as before Jan. 19 when it abolished cash commercial discounts and reduced the differential between posted tank wagon and posted service station prices from 2 cents to 1 cent by advancing the posted tank wagon price 1 cent.

The company re-established the 2-cent discount from posted tank wagon prices to dealers except in Manhattan, Bronx, Brooklyn and Queens boroughs of New York city where a 3-cent differential was re-established. Controlled and uncontrolled dealer accounts now get the same discounts. From Jan. 19 to Feb. 20 controlled accounts were granted a discount of 3 cents off posted tank wagon and uncontrolled accounts 2½ cents off posted tank wagon, or 4 and 3½ cents, respectively, off posted service station prices.

The Feb. 20 change puts charge commercial accounts for service station delivery of gasoline back on a 2-cent discount basis as most of the commercial account contracts in New York territory are based on the posted tank wagon prices for service station delivery.

However, cash commercial discounts were not resumed by the New York company.

Sales of U. S. Motor gasoline at New York harbor continued in a sizable volume, according to sellers who have been quoting 7 cents per gallon for tank car delivery. The 7.50-cent quotations attracted little business.

Activity among the jobbing trade picked up considerably along the latter part of the week when those buyers began to inquire for their March requirements.

In the Baltimore and Philadelphia markets, regular U. S. Motor in tank cars was quoted generally at 7.50 cents. The same material in barge lots was sold at 6.75 cents. At this writing jobber buying in those districts was not particularly active. Quotations on California gasoline were unavailable in Philadelphia as this material was marketed in a blended form.

In the New England market posted prices for regular U. S. Motor remained unchanged while the material moved on contracts based on the tank wagon prices will be delivered in tank cars at approximately 1 cent under the posted prices. Gasoline sales in the open market have recently been few.

Heating oils continued in good demand in both New York and Boston at 4.50 cents for the 28-34 gravity and 5.50 cents for the 36-40 gravity grades. According to sellers who have been quoting these prices little trouble was encountered in marketing their product at these prices. Kerosine, likewise, continued in good demand at 6.25 cents per gallon at New York harbor.

Posted prices for Grade C bunker oil were unchanged at $1.05 per barrel at New York and Boston. Diesel oil was quoted at $1.85 at New York harbor.

Gulf Coast Markets

Roumanian Gasoline Cuts Gulf Market

Staff Special
NEW YORK, Feb. 21

GULF coast bulk markets offered little competition to Continental European markets the last week. However, some encouragement was derived from the report that stocks of Roumanian material were running low.

A French company inquired early in the week for a mixed cargo of approximately 30,000 barrels of 64-66, 375 end point gasoline, 2500 barrels of U. S. Motor, and 21,000 barrels of water white kerosine for March and April lifting. Quotations by American sellers failed to interest the buyer.

Information received from sellers conversant with the European market revealed that Roumanian companies have consistently quoted 4.50 cents for 64-66, 375 end point gasoline, 3.50 cents for regular U. S. Motor, and 2.50 cents for water white kerosine. Such prices coupled with a 0.25-cent freight advantage has prevented the profitable entry of American material into this market.

The apparent oversupply at refineries in the Black Sea region, it was reported, is the result of the companies' overproduction of crude, in anticipation of a proration program which was to have been entered into last year. Before production was to be actually curtailed the leading refiners stocked themselves to top capacity and then found themselves in sharp competition with one another. There are some 20 modern refineries in the district. It was also reported that these companies were not accepting orders for loading later than April. However, the business closed the last week indicates that some companies will still consider future business on the basis of the present market.

A large Spanish company contracted with Rumanian sellers for an amount of material which, it is said, will take a large proportion of the European supply out of the 1931 market.

The market for cased goods went through the week without an inquiry. Prices of all cased material remained unchanged. Likewise, gas oils in cargo lots were quoted at the same levels as has existed since the first of the year.

Grade C Bunker oil in cargo lots was available at $0.65 per barrel in a quiet market.

Venezuelan Crude

The market for Venezuelan crude marked time. No sales were reported. The market price based on the last sale remained at $0.76 per barrel, f.o.b. deepwater in the Lake Maracaibo region.

Panuco Crude

The market for Panuco crude continued quiet. This material was available for $0.50 per barrel, f.o.b. Tampico.

Wax Markets

Inquiries for Small Lots

NEW YORK, Feb. 21.—Wax markets were featureless this week. A few United Kingdom buyers inquired for small lots of scale wax for prompt shipment. Sellers reported a dearth of inquiry for the refined grades. There was no disposition on the part of sellers to shade prices below present levels.

Prices for all grades of wax in both New York and New Orleans markets remained generally unchanged.

Gulf Lubes Unchanged

HOUSTON, Feb. 21.—Pale and red oil prices were unchanged in Gulf Coastal lubricant markets. Manufacturers report normal demand for the season. Shipments were mainly on jobber contracts the past week with only nominal inquiries affecting spot sales.

Dismiss Charges Against New England Marketers

NEW YORK, Feb. 18.—Charges of conspiracy to injure the business of the Keith Oil Corp. of Brockton, Mass., directed at 12 oil companies and eight agents of companies were dismissed Feb. 12. Judge Elias Bishop of Plymouth directed acquittals after the prosecution had presented its case, but before the defense was called on for any testimony.

It had been alleged that the oil companies had sought to get the Keith interests to sign the code of ethics. When the Keiths refused it was alleged that the companies reduced the price of gasoline 2 cents per gallon Jan. 2 as a retaliatory measure.

Companies involved in the case as defendants were, Standard Oil Co. of New York, Shell Eastern Petroleum Products Inc., Tide Water Oil Sales Corp., The Texas Co., Gulf Refining Co., Mexican Petroleum Products Co., Sun Oil Co., Atlantic Refining Co., Colonial Beacon Oil Co., Cities Service Refining Co., Sinclair Refining Co. and Jenney Manufacturing Co.

Newark Company Moves Offices

CLEVELAND, Feb. 21.—Announcement of a change in the location of its offices was recently made by the Gasoline Products Co. of Newark, N. J. The offices, formerly at the foot of Danforth Avenue, have been removed to 11 Commerce Ave., Newark.

FOR TIGHTER JOINTS
Three Handy Sizes:
⅛ pint 15c
1 pint 75c
1 quart $1.45
(Postage extra)
GILBERT & BARKER PIPE SEALING COMPOUND
Leaks in gasoline pipe lines can be serious. Use Gilbert & Barker Pipe Sealing Compound. Makes every coupling, tee or elbow tight as a weld. No stock losses. No costly overhauling. Approved by Underwriters.
Order direct from
GILBERT & BARKER MFG. COMPANY, SPRINGFIELD, MASS.

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Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE—LUBRICATING OILS
NAPHTHA—GAS—OILS
WAX—PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices:
PITTSBURGH, PA.

District Sales Offices: New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

	Prices Feb. 23	Prices Feb. 16	Prices Feb. 9
U. S. MOTOR GASOLINE			
New York harbor	7.00	7.00 – 7.50	7.00
Portland district	*8.00 – 8.25	*7.75 – 8.00	*7.75 – 8.00
Boston district	*7.90 – 8.00	*7.40 – 7.50	*7.40 – 7.50
Providence district	*8.25 – 8.75	*8.00 – 8.25	*8.00 – 8.25
Philadelphia district	7.50	7.00 – 7.50	7 00
Baltimore district	7.50	7.00 – 7.50	7 00
Norfolk district	7.50	7.00 – 7.50	7.00
Charleston district	7.50	7.00 – 7.50	7.00
Savannah district	7.50	7.00 – 7.50	7.00
Jacksonville district	7.50	7.00 – 7.50	7.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	†7.00	†7.00	†7.00
Philadelphia district	†7.00	†7.00	7.00
Baltimore district	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
‡DOMESTIC AVIATION GASOLINE			
New York harbor	10.00 –13.00	10.00 –13.00	10.00 –13.00
Philadelphia	10.00 –12.00	10.00 –12.00	10.00 –12.00
Baltimore	11.00 –13.00	11.00 –13.00	11.00 –13.00
Boston	11.50 –13.00	11.50 –13.00	11.50 –13.00

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F. and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347° end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSINE			
New York harbor	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
Philadelphia district	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
Baltimore district	6.50	6.50	6.50
GAS OIL: 28-34 Gravity			
New York harbor	4.50	4.50	4.50
Boston district	4.50	4.50	4.50
FURNACE OIL: 36-40 Gravity			
New York harbor	5.50	5.50	5.50
Boston district	5.50	5.50	5.50
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$1.85	$1.85	$1.85

†Nominal. *Delivered prices.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	Feb. 23	Feb. 16	Feb. 9
CYLINDER OILS (Pennsylvania Products)			
Bright stock, No. 8 color	24.00 –26.00	24.00 –26.00	24.00 –26.00
Bright stock, No. 6½ color diluted	23.00 –25.00	23.00 –25.00	23.00 –25.00
600 D filtered	22.50 –25.00	22.50 –25.00	22.50 –25.00
600 Warren E. filtered	19.00 –22.00	19.00 –22.00	19.00 –22.00
600 stm. refd. unfiltered	15.00 –17.00	15.00 –17.00	15.00 –17.00
650 stm. refd. unfiltered	18.00 –20.00	18.00 –20.00	18.00 –20.00
600 flash, steam refined	18.50 –21.00	19.50 –23.00	19.50 –23.00
630 flash, steam refined	25.00 –28.00	25.00 –28.00	25.00 –28.00
RED PARAFFIN OILS (Vis. 100°)			
300 vis. No. 6½ color	17.00 –20.00	17.00 –20.00	17.00 –20.00
250 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
200 vis. No. 6 color	14.75 –17.00	14.75 –17.00	14.75 –17.00
PALE PARAFFIN OILS (Vis. 100°)			
230 vis. No. 3¾ color	21.50	21.50	21.50
180 vis. No. 3¼ color	18.00 –20.00	18.00 –20.00	18.00 –20.00
100 vis. No. 2¼ color	12.50 –15.00	12.50 –15.00	12.50 –15.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	28.00 –30.00	28.00 –30.00	28.00 –30.00
500 vis. No. 6½ color	26.50 –29.50	26.50 –29.50	26.50 –29.50
400 vis. No. 7¼ color	25.00 –28.00	25.00 –28.00	25.00 –28.00
300 vis. No. 6 color	22.00 –26.00	22.00 –26.00	22.00 –26.00
200 vis. No. 6 color	21.00 –23.50	21.00 –23.50	21.00 –23.50

Wax Market

(Melting points are A.M.P. method. Prices in cents per pound, f.a.s. carload lots.)

NEW YORK	Feb. 23	Feb. 16	Feb. 9
124-126 Yellow crude scale	2.25	2.25	2.25
122-124 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
124-126 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
123-125 Fully refined	3.25	3.25	3.25
125-127 Fully refined	3.375– 3.50	3.375– 3.50	3.375– 3.50
128-130 Fully refined	3.625– 3.75	3.625– 3.75	3.625– 3.75
130-132 Fully refined	3.625– 3.875	3.625– 3.875	3.625– 3.875
133-135 Fully refined	4.375– 4.50	4.375– 4.50	4.375– 4.50
135-137 Fully refined	4.625– 4.75	4.625– 4.75	4.625– 4.75
NEW ORLEANS			
124-126 Yellow crude scale	2.25	2.25	2.25
122-124 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
124-126 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
123-125 Fully refined	3.25	3.25	3.25
125-127 Fully refined	3.375– 3.50	3.375– 3.50	3.375– 3.50
128-130 Fully refined	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
130-132 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
133-135 Fully refined	4.375	4.375	4.375

Gulf Coast Bulk Market

(Prices are f. o. b. Gulf oil terminals representing sellers' opinions covering bulk shipments of 20,000 barrels or more, for export and / or coastwise shipment unless otherwise noted.)

GASOLINE	Prices Feb. 23	Prices Feb. 16	Prices Feb. 9
U. S. Motor	5.125– 5.25	5.125– 5.25	5.125– 5.25
60-62, 400 e.p.	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
61-63, 390 e.p.	5.75 – 5.875	5.75 – 5.875	5.75 – 5.875
64-66, 375 e.p.	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
U. S. Motor, cases (cargoes)	$1.60	$1.60	$1.60
64-66, cases (cargoes)	$1.70 –$1.72	$1.70 –$1.72	$1.70 –$1.72
KEROSINE			
44 water white	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
41-43 prime white	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
Water white, cases (cargoes)	$1.40	$1.40	$1.40
Prime white, cases (cargoes)	$1.30	$1.30	$1.30
GAS & BUNKER OILS			
*26-30 translucent gas oil	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
*30 plus translucent gas oil	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
Grade C bunker oil, for ships' bunkers, per bbl.	$0.90	$0.90	$0.90
Grade C bunker oil, per bbl. in cargoes	$0.65	$0.65	$0.65

*Less than ½ of 1% sulphur.
†Represents sales only.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl.	$0.50 –$0.52	$0.50 –$0.52	$0.50
Grade C bunker oil for bunkering, taxes paid, per bbl.	$0.90	$0.90	$0.90
VENEZUELA CRUDE			
F. o. b. deepwater, Lake Maracaibo region	$0.76	$0.76	$0.77
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Gulf oil terminals.)			
100 vis. No. 2 unfiltered pale	4.75 – 5.75	4.75 – 5.75	4.75 – 5.75
200 vis. No. 3 unfiltered pale	6.75 – 8.25	6.75 – 8.25	6.75 – 8.25
300 vis. No. 3 unfiltered pale	7.75 – 9.50	7.75 – 9.50	7.75 – 9.50
500 vis. No. 3½ unfiltered pale	8.75 –10.50	8.75 –10.50	8.75 –10.50
750 vis. No. 4 unfiltered pale	10.25 –12.75	10.25 –12.75	10.25 –12.75
1200 vis. No. 4 unfiltered pale	14.00 –16.00	14.00 –16.00	14.00 –16.00
200 vis. No. 5-6 red oil	6.00 – 6.75	6.00 – 6.75	6.00 – 6.75
300 vis. No. 5-6 red oil	7.00 – 7.75	7.00 – 7.75	7.00 – 7.75
500 vis. No. 5-6 red oil	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
750 vis. No. 5-6 red oil	9.25 –11.50	9.25 –11.50	9.25 –11.50
1200 vis. No. 5-6 red oil	13.00 –15.00	13.00 –15.00	13.00 –15.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Feb. 23	Feb. 16	Feb. 9
Gasoline, U. S. Motor, 53-55 Gravity	5.00	5.00	5.00
Gasoline, U. S. Motor-blends and special cuts	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
Gasoline, 400 e.p. blend.	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
Gas Oil, 30-34 per bbl.	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
Diesel Oil, 27 plus, per bbl.	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
Bunker oil, 14-18 per bbl.	$0.64 –$0.85	$0.64 –$0.85	$0.64 –$0.85
Fuel oil, 14-18 per bbl.	$0.60 –$0.95	$0.60 –$0.95	$0.60 –$0.95
Kerosine, 38-40 w.w., 125-150 flash, per gal.	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Gasoline, 400 e.p. blend	$1.85 –$2.00	$1.85 –$2.00	$1.85 –$2.00
Kerosine, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Feb. 23 Crude &/or Fuel	Feb. 23 Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	21	18
Gulf to U. K. or Continental ports*	10-11	†10
North Atlantic to U. K. or Continental ports*	9/6	†8/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.45-$0.50	$0.45-$0.50
Gulf to North Atlantic ports (not E. of N. Y.)**	14-16	15

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate, for Tampico 2c to 3c per bbl. additional. †Two ports discharged.

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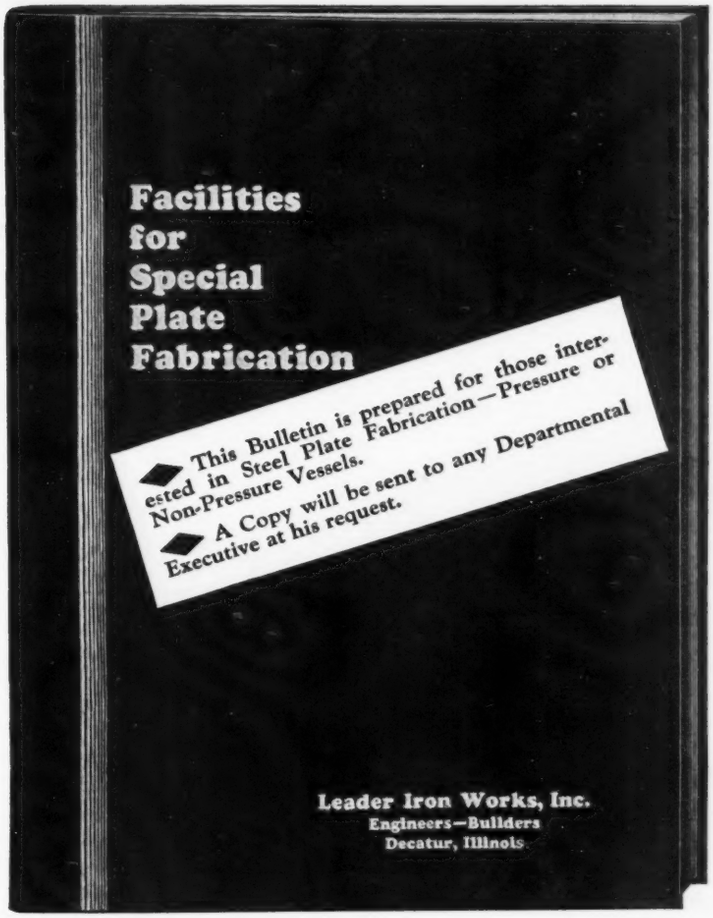
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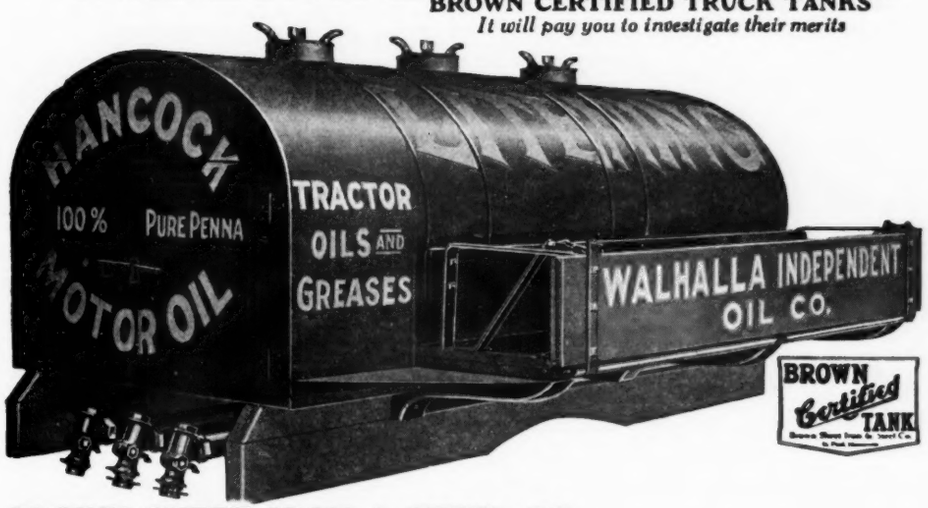

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Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect Feb. 23, 1931, as Posted by Principal Marketing Companies

S.O.NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Gasoline Total T.W.	Gasoline S.S.	Oil T.W.
Atlantic City, N. J.	11.5	3	14.5	16.5	11.5
Newark, N. J.	10.5	3	13.5	15.5	10.5
Annapolis, Md.	12	4	16	17	11
Baltimore, Md.	11.2	4	15.2	16.2	9.5
Cumberland, Md.	13	4	17	18	12
Washington, D. C.	11.7	2	13.7	14.7	10.7
Danville, Va.	12.8	5	17.8	18.8	11.8
Norfolk, Va.	11.3	5	16.3	17.3	10
Richmond, Va.	11.7	5	16.7	17.7	10.7
Roanoke, Va.	13	5	18	18	12
Petersburg, Va.	12.3	5	17.3	18.3	11.3
Charleston, W. Va.	12.5	4	16.5	17.5	11.5
Keyser, W. Va.	13.1	4	17.1	18.1	12.1
Parkersburg, W. Va.	11.2	4	15.2	16.2	10.2
Wheeling, W. Va.	12.4	4	16.4	17.4	11.4
Raleigh, N. C.	13.2	5	18.2	19.2	12.2
Charlotte, N. C.	13.3	5	18.3	19.3	12.3
Hickory, N. C.	13.6	5	18.6	19.6	12.6
Mt. Airy, N. C.	13.5	5	18.5	19.5	12.5
Salisbury, N. C.	13.5	5	18.5	19.5	12.5
Charleston, S. C.	11.3	6	17.3	18.3	10.3
Columbia, S. C.	13.2	6	19.2	20.2	12.2

Note: 2c per gallon discount off retail t.w. price of gasoline to dealers only thru S. O. New Jersey territory, except Washington, D. C. where discount is 3c.

S. O. NEW YORK

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	11.3	2	13.3	15.3	10
Borough of Richmond	11.7	2	13.7	15.7	12
Albany, N. Y.	12.6	2	14.6	16.6	9.5
Buffalo, N. Y.	11.8	2	13.8	15.8	9
Rochester, N. Y.	12	2	14	16	9
Syracuse, N. Y.	12.8	2	14.8	16.8	9.5
Boston, Mass.	11.5	2	13.5	15.5	10
Augusta, Me.	12.8	4	16.8	18.8	12.8
Manchester, N. H.	12.4	4	16.4	18.1	10
Burlington, Vt.	13.3	4	17.3	19.3	10
New Haven, Conn.	12.6	2	14.6	16.6	12.6
Providence, R. I.	11.7	2	13.7	15.7	10

Discounts on gasoline: 2c per gal. off posted t. w. price to dealers, thru territory, except 3c to dealers in New York City, effective Feb. 20, 1931.

ATLANTIC REFINING

Pittsburgh, Pa.	14	*	14	19	12
Philadelphia, Pa.	14	*	14	19	12
Allentown, Pa.	14	*	14	19	12
Erie, Pa.	14	*	14	18	12
Scranton, Pa.	14	*	14	19	12
Altoona, Pa.	14	*	14	19	12
Dover, Del.	14	3	17	19	12
Wilmington, Del.	14	3	17	19	12
Boston, Mass.	12.5	2	14.5	15.5	10
Springfield, Mass.	13.5	2	15.5	16.5	10
Worcester, Mass.	13.3	2	15.3	16.3	10
Fall River, Mass.	13.1	2	15.1	16.1	10
Providence, R.I.	12.7	2	14.7	15.7	10
Hartford, Conn.	13.5	2	15.5	16.5	10
New Haven, Conn.	13.6	2	15.6	16.6	10
Atlantic City, N. J.	11.5	3	14.5	16.5	11.5
Camden, N. J.	10.6	3	13.6	15.6	10.6
Trenton, N. J.	11	3	14	16	11
Annapolis, Md.	12	4	16	17	11
Baltimore, Md.	11.2	4	15.2	16.2	10.2
Hagerstown, Md.	12.7	4	16.7	17.7	11.7
Richmond, Va.	11.7	5	16.7	17.7	10.7
Wilmington, N. C.	11.4	5	16.4	17.4	12.4
Brunswick, Ga.	13	6	19	21	**15
Jacksonville, Fla.	13	6	19	21	14

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics. Erie has dealer discount of 3c off t.w. price, effective Nov. 6.

*3-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosine prices include 1c state tax.

Latest Changes in Tank Wagon Prices

Gasoline

S. O. New York—T. w. only cut 1c, thru New York and New England, **Feb. 20.** Dealer discounts changed to 2c per gal. off t. w. price to all dealers thru territory except 3c in New York City.

Atlantic Refining—Correction: T. w. and s. s. up 1c, Wilmington, to 16.4c and 17.4c respectively, including 5c tax, **Nov. 4, 1930.** Prices in issues of NATIONAL PETROLEUM NEWS since that date have been in error.

T. w. and s. s. cut 1c, Brunswick, Ga., to 19c and 21c, including 6c tax, **Jan. 19.**

T. w. and s. s. up 2c, Jacksonville, to 19c and 21c, including 6c tax, **Jan. 19.**

S. O. Kentucky—S. s. only cut 1c, Louisville, to 17c, including 5c tax, **Feb. 19.**

T. w. and s. s. cut 1c, Covington, to 16c and 17c respectively, including 6c tax, **Feb. 19.**

S. O. Indiana—Q.D.A. in Chicago revised, **Feb. 17,** eliminating 5c discount on 1000 gallons and over. New Q.D.A. is: 4c per gal. off s. s. price on over 500 gallons.

S. s. only cut 1.9c, Kansas City, to 15c, including 3c state and city taxes, **Feb. 17.**

T. w. and s. s. up 1c Grand Rapids, to 16.7c and 17.7c, including 3c tax, **Jan. 3.** Prices at Grand Rapids have been in error in NATIONAL PETROLEUM NEWS issues subsequent to Jan. 3. They are corrected in this issue.

S. O. Louisiana—T. w. and s. s. up 2.5c, Little Rock, to 18.5c and 19.5c respectively, including 5c tax, **Feb. 16.**

Magnolia Petroleum—T. w. and s. s. up 1c, Dallas, Fort Worth and Houston, and 2c in San Antonio, **Feb. 9.** New prices are: t. w., all foregoing points, 15c, including 4c tax; s. s., Dallas and Fort Worth, 18c; and Houston and San Antonio, 19c.

S. O. California—Wholesale price cut 4c, Reno, to 22c including 4c tax, **Feb. 12.**

S. O. KENTUCKY

	Gasoline T.W.	Tax	Gasoline Total T.W.	Gasoline S.S.	Oil T.W.
Ashland, Ky.	12	5	17	19	13
Lexington, Ky.	12	5	17	18	13.5
Louisville, Ky.	11	5	16	17	11
Bowling Green, Ky.	14	5	19	21	14.5
Corbin, Ky.	14	5	19	21	15
Paducah, Ky.	12	5	17	19	12
Covington, Ky.	11	5	16	17	13.5
Clarksdale, Miss.	13	5	18	20	13.5
Gulfport, Miss.††	11	5	16	16	13.5
Jackson, Miss.	13	5	18	20	13.5
Natchez, Miss.	13	5	18	20	13.5
Vicksburg, Miss.	13	5	18	18	13.5
Birmingham, Ala‡‡	15	4	19	21	15
Mobile, Ala‡	15	4	19	21	15
Montgomery, Ala.*	15	4	19	21	15.5
Atlanta, Ga.	14	6	20	22	†13.5
Augusta, Ga.	14	6	20	22	†15.5
Macon, Ga.	14	6	20	22	†13
Savannah, Ga.	14	6	20	20	†14
Jacksonville, Fla.	13	6	19	21	14
Miami, Fla.	14	6	20	22	15
Tampa, Fla.	13	6	19	21	14
Pensacola, Fla.**	14	6	20	22	15

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosine at Montgomery included.

†Georgia kerosine prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

S. O. OHIO

Ohio statewide	10	4	14	15	11

Note: Discount on gasoline to dealers and commercial consumers generally thru Ohio is 2c per gal. off above t.w. prices.

Discount on kerosine to dealers and commercial consumers is 3c per gal. off t.w. price thru Ohio.

S. O. INDIANA

	Gasoline T.W.	Tax	Gasoline Total T.W.	Gasoline S.S.	Oil T.W
Chicago, Ill.	11	3	14	15	11
Decatur, Ill.	13.4	3	16.4	17.4	11
E. St. Louis, Ill.	10.7	3	13.7	14.7	10.2
Joliet, Ill.	13.4	3	16.4	17.4	11
Peoria, Ill.	13.4	3	16.4	17.4	11
Quincy, Ill.	13.2	3	16.2	17.2	10.8
Springfield, Ill.	13.4	3	16.4	17.4	11
Indianapolis, Ind.	10.9	4	14.9	15.9	12.1
Evansville, Ind.	13.1	4	17.1	18.1	11.9
South Bend, Ind.	13.4	4	17.4	18.4	12.2
Detroit, Mich.	13.8	3	16.8	15.8	12.7
Grand Rapids, Mich.	13.7	3	16.7	17.7	12.6
Saginaw, Mich.	13.9	3	16.9	17.9	12.8
Green Bay, Wisc.	13.6	2	15.6	16.6	11.4
Madison, Wisc.	13.3	2	15.3	16.3	11.1
Milwaukee, Wisc.	13.1	2	15.1	16.1	10.9
La Crosse, Wisc.	14.2	2	16.2	17.2	12
Minneapolis, Minn.	14.2	3	17.2	18.2	11.9
Duluth, Minn.	14.5	3	17.5	18.5	11.9
Mankato, Minn.	14.1	3	17.1	18.1	11.7
Des Moines, Ia.	13.5	3	16.5	17.5	11.3
Davenport, Ia.	13.5	3	16.5	17.5	11.3
Sioux City, Ia.	13.1	3	16.1	17.1	10.9
Mason City, Ia.	13.5	3	16.5	17.5	11.3
St. Louis, Mo.	*10.9	2	12.9	13.9	10.3
Kansas City, Mo.	†13.9	2	15.9	15	9.6
St. Joseph, Mo.	†13.5	2	15.5	16.5	10.1
Fargo, N. D.	15.9	3	18.9	17	13.9
Grand Forks, N. D.	16.2	3	19.2	20.2	14.2
Minot, N. D.	15.9	3	18.9	19.9	13.9
Pierre, S. D.	14	4	18	19	12.4
Huron, S. D.	14.3	4	18.3	17.5	12.7
Wichita, Kans.	11.8	3	14.8	13.8	9.8
Bartlesville, Okla.	11.5	4	15.5	18.5	9.5

S. O. Indiana's quantity contract price schedule thru territory (except in Chicago, which see below) on tank truck deliveries of gasoline, figured from the service station price is 3c for 500 gal. or more a month; and 4½c for 75,000 gals. or more a month.

In Chicago and vicinity, these discounts apply Over 500 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

Above prices include these inspection fees on both gasoline and kerosine, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosine; Arkansas, 1/20c on both; Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 2/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 1/50c to 1/2c on both; Nebraska 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosine; Wisconsin, 1/25c on both.

Kerosine inspection fees only, per gallon; Iowa 7/100c; Michigan, 1/5c to 4/3c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

These Prices in Effect Feb. 23, 1931, as Posted by Principal Marketing Companies

S. O. NEBRASKA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Omaha, Neb.	13.25	4	17.25	18.25	11.25
McCook	14.75	4	18.75	20.75	12.75
Norfolk	13.25	4	17.25	17.25	11.75
North Platte	14.75	4	18.75	20.75	12.50
Scottsbluff	12	4	16	16	12.25

Note: Discounts: 1c per gal. off tank wagon price of gasoline for 1,000 gallon dumps per month to consumers taking tank wagon delivery only discount applying only at normal points.

S. O. LOUISIANA

	Posted Retail T.W.	Tax	Total Posted Retail T.W.	Posted Retail S.S.	T.W.
Little Rock, Ark.	13.50	5	18.5	19.5	12
Alexandria, La.	12.5	*6	18.5	19.5	†13
Baton Rouge, La.	12.5	5	17.5	18.5	†13
New Orleans, La.	10.5	*6	16.5	17.5	†12
Lake Charles, La.	12.5	*6	18.5	19.5	†13
Shreveport, La.	12.5	5	17.5	18.5	†13
Lafayette, La.	12.5	*6	18.5	19.5	†13
Bristol, Tenn.	15	5	20	21	14
Chattanooga, Tenn.	13.5	5	18.5	19.5	13
Knoxville, Tenn.	14	5	19	20	15
Nashville, Tenn.	13	5	18	19	15
Memphis, Tenn.	12	5	17	18	12.5

Note: Discounts in S. O. La. territory: To dealers and commercial consumers from the tankwagon, 2c per gal. off posted retail t.w. price.

*Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 5c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.

†Kerosine price in Louisiana includes 1c state tax

MAGNOLIA PETROLEUM

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Muskogee, Okla.	11	4	15	18	9
Oklahoma City.	9	4	13	16	10
Tulsa, Okla.	9	4	13	17	10
Fort Smith, Ark.†	13.5	4	17.5	18.5	12
Little Rock, Ark.	11	5	16	17	12
Texarkana, Ark.*	13	4	17	17	11
Dallas, Tex.	11	4	15	18	11
Fort Worth, Tex.	11	4	15	18	10
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	11	4	15	19	10
El Paso, Tex.	12	4	16	20	12

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

CONTINENTAL OIL

Denver, Colo.	8	4	12	14	13.5
Pueblo, Colo.	10	4	14	17	13.5
Grand Junc., Colo.	14	4	18	19	17
Casper, Wyo.	13	4	17	20	12
Cheyenne, Wyo.	14	4	18	19	13.5
Butte, Mont.	14	5	19	22	18
Helena, Mont.	15	5	20	23	18
Salt Lake City, Utah.	15.5	3½	19	22	17
Boise, Ida.*	17.5	5	22.5	..	19
Twin Falls, Ida.*	17.5	5	22.5	..	19
Albuquerque, N. M.	11	5	16	20	14

***2.5c off t.w. to dealers at time of delivery at Twin Falls, effective Dec. 16.**

S. O. CALIFORNIA

	Tax	Retail Price	Posted Wholesale	T.W.
Phoenix, Ariz.	5	22.5	20.5	20
Los Angeles, Cal.	3	20.5	20.5	15.5
Fresno, Cal.	3	21	21	17
San Francisco, Cal.	3	21	21	15.5
Reno, Nev.	4	20	22	19
Portland, Ore.	4	22.5	22.5	16.5
Seattle, Wash.	3	21.5	21.5	16.5
Spokane, Wash.	3	22	22	20.5
Tacoma, Wash.	3	21.5	21.5	16.5

Note: 4c per gal. discount to dealers off posted retail price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 3c discount at Phoenix plus a 2c special temporary discount Jan. 30, subject to withdrawal at any time. This discount determines net t.w. price.

CANADA

Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S	Oil T.W.
ONTARIO					
Toronto	18.5	5	23.5	27	19.5
Ottawa	18.5	5	23.5	27	19.5
North Bay	21.5	5	26.5	32	22.5
Ft. William	21.5	5	26.5	30	21.5
Border Cities, including Windsor	17.5	5	22.5	26	18.5
MANITOBA					
Winnipeg	20	5	25	29	20.5
SASKATCHEWAN					
Regina	25	5	30	34	24
ALBERTA					
Edmonton	26.5	5	31.5	35	26.5
Calgary	22.5	5	27.5	31	22.5
BRITISH COLUMBIA					
Vancouver	23	5	28	30	24
QUEBEC					
Montreal	19.5	5	24.5	28	20.5
Quebec City	20.5	5	25.5	29	21.5
Three Rivers	20.5	5	25.5	29	21.5
NEW BRUNSWICK					
St. John	19	5	24	28	21
Moncton	19	5	24	28	21
NOVA SCOTIA					
Halifax	19	5	24	28	21
PRINCE EDWARD ISLAND					
Charlottetown	19	5	24	28	21

Note: In districts surrounding these points 1c additional is added to city price.

NAPHTHA PRICES

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	12.7	14.7	16.2
Detroit	15.4	16.9	17.7
Kansas City	†13.9	†15.4	†16.2
Milwaukee	14.4	*17.9	*18.7
Minneapolis	**18.7	**20.2	**21
St. Louis	13.6	15.1	15.9
New York		14	20
Boston		17	20

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b.refinery or seaboard terminal)

New York harbor	10.00
Philadelphia district	10.00
Providence	10.50

Tank Wagon or Steel Barrels

New York City	14
Syracuse	17
Rochester	18
Buffalo	16
Providence	17
Boston	17
Bridgeport	15
Newark	16
Philadelphia	14
Lancaster	17
Altoona	17
Baltimore	17

Note: 2c off above t.w. prices to large buyers in some instances.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect Feb. 23, 1931

	T.W.	Tax	Total T.W.
Newark, N. J.	16.9	*	16.9
Baltimore, Md.	16.2	4	20.2
Washington, D. C.	17	2	19

*New Jersey road tax of 3c does not apply on aviation gasoline, exemption being claimed at time of purchase.

All above prices are on Stanavo Aviation Gasoline.

COLONIAL BEACON OIL CO.

New York City	17.5	2	19.5
Boston	17	2	19

S. O. PENNSYLVANIA

Philadelphia, Pa.	18	3	21
Pittsburgh, Pa.	18	3	21
Altoona, Pa.	18	3	21

S. O. OHIO

Thru Ohio	15	4	19

Discounts given by S. O. Ohio: For airport delivery only; 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over, per month, 3c; 24,000 gals. and over per month, 4c.

S. O. INDIANA

Chicago	16	3	19
Indianapolis, Ind.	16.3	4	20.3
Detroit, Mich.	16.8	3	19.8
Milwaukee, Wis.	16.1	2	18.1
Minneapolis, Minn.	17.2	3	20.2
St. Louis, Mo.	15.4	2	17.4
Kansas City, Mo.	15.9	3	18.9
Fargo, N. D.	18.9	3	21.9
Huron, S. D.	17.3	4	21.3
Wichita, Kan.	14.8	3	17.8

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. Kansas City tax of 3c includes 1c city tax.

S. O. LOUISIANA

New Orleans, La.	18	6	24
Nashville, Tenn.	20	5	25
Memphis, Tenn.	19	5	24

2c per gal. discount off above t. w. prices to dealers and commercial consumers.

S. O. NEBRASKA

	T.W.	Tax	Total T.W.
Omaha	16.25	4	20.25

2c per gal. refund to reseller.

CONTINENTAL OIL CO.

Denver, Colo.	11	4	15
Cheyenne, Wyo.	17	4	21
Helena, Mont.	18	5	23
Salt Lake City, Utah.	18.5	3.5	22
Albuquerque, N. M.	15	5	20
Boise, Ida.	20.5	5	25.5

S. O. CALIFORNIA

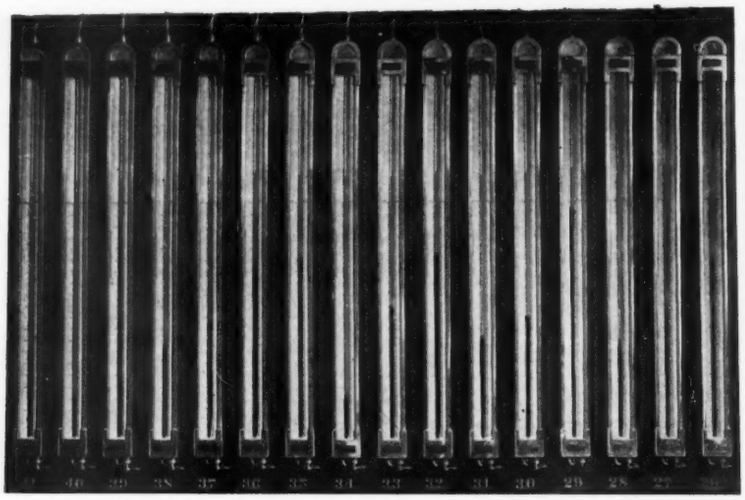
Phoenix, Ariz.	12	4	21.5
Los Angeles, Cal.	16.5	3	19.5
San Francisco, Cal.	17	3	20
Reno, Nev.	21	4	25
Portland, Ore.	17.5	4	21.5
Seattle, Wash.	17.5	3	20.5
Spokane, Wash.	21.5	3	24.5

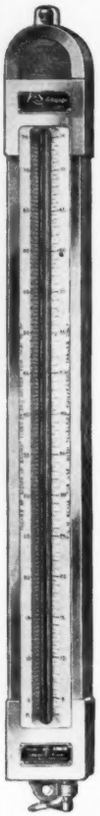
Note: 4c per gallon added to t.w. price, in S. O. California territory, to customers taking delivery direct into the fuel tank of planes.

The Master Electric Co., Dayton, O., has published price book No. 98 in which are described its new geared head motors for speed acceleration and reduction, refrigerator motors, totally enclosed air jacketed motors and explosion resisting motors. The Master explosion resisting motor is now supplied with switch built in as a complete unit.

A specification chart, construction details and performance of single and polyphase motors are described with many illustrations showing design and construction.

THE HYDROSTATIC DISTANT READING GAUGE





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PRIMROSE PETROLEUM CO., INC.

(Incorporated under the Laws of the State of Texas, 1916)

DALLAS, TEXAS

The Law of Chemical Patents

"THE Law of Chemical Patents" by Edward Thomas, is written for the man who is interested first in what a patent shows on its face; what its relation is to the prior art; and what its relation is to possible infringements.

The book tells what has been said in the courts on every phase of the subject. For example it cites *what the Courts have said on*:

Nature of a Patent; Disclosure in a Chemical Patent; the invention, its date and nature; nature of a patentable process; anticipation by prior uses; by prior publication; Nature of a Valid process claim in the patent; infringement of valid process claim; Permissible amendments; amending patent after it issues; double patenting and the joinder of inventions; assignments, licenses and royalties; contests between rival claimants; patent suits and patent evidence and some other more minor subheads.

Actions taken in courts are cited with complete references to the legal documents involved, with quotations of the statements pertinent to the subject under discussion. Each chapter is introduced with a brief outline of the subject, and the remainder is devoted to quotations which definitely answer questions on which information should be available to those holding patents or about to apply for them.

The present complicated situation with regard to patents on refining processes, especially cracking, makes this book particularly valuable to every refiner, oil attorney, chemist, etc. 420 pages.

————Clip and Mail————

NATIONAL PETROLEUM NEWS

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Crude Oil Prices (in Effect Feb. 23, 1931)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Bradford—Allegheny district (posted by Tide Water Pipe Co., Ltd.) (Effective Nov.12,1930) $2.15
Penna. Grade Oil in National Transit Lines (Effective Nov. 12, 1930) *1.85
Penna. Grade Oil in Southwest Penna. Pipe Lines (Effective Nov. 12, 1930) 1.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Nov. 12, 1930).. 1.70
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Nov. 12, 1930) .1.45
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Dec. 31, 1930)..... 1.15
Somerset oil in main system of Cumberland Pipe Line (posted by Ashland Refining Co.) (Effective Dec. 18).....$1.03
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929).....$0.60
*Oil run prior to July 1, 1929 is 5c less per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Dec. 19, 1930).....$0.80

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon), effective Oct. 28, 1930, same gravity and price schedule as Prairie posts in Oklahoma and Kansas, which see below.

(Posted by Pure Oil Co.)

Midland, Midland County (Oct. 28, 1930)...$1.10

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective Oct. 28, 1930

Wooster	$1.35	Princeton	$1.30
Lima	1.10	Illinois	1.30
Waterloo	1.20	Plymouth	0.88
Indiana	0.87	West Kentucky	1.15

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Effective Oct. 28, 1930

Petrolia.....$1.50
Oil Springs..... 1.57

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of *Stanolind Crude Oil Purchasing Co. (In Oklahoma, Kansas, †North and North Central Texas)

Effective Oct. 25, 1930

Below 29	$0.65	35-35.9	$0.92
29-29.9	0.69	36-36.9	0.95
30-30.9	0.73	37-37.9	0.98
31-31.9	0.77	38-38.9	1.01
32-32.9	0.81	39-39.9	1.04
33-33.9	0.85	40 and above	1.07
34-34.9	0.89		

*Prairie Oil & Gas withdrew postings in Oklahoma, Kansas and Texas, Jan. 1, 1931.

†Excepting Wichita, Wilbarger and Foard counties, which see below.

North Texas: Wichita, Wilbarger and Foard Counties

Effective Jan. 16, 1931

Below 29	$0.55	35-35.9	$0.69
29-29.9	0.57	36-36.9	0.71
30-30.9	0.59	37-37.9	0.73
31-31.9	0.61	38-38.9	0.75
32-32.9	0.63	39-39.9	0.77
33-33.9	0.65	40 and above	0.79
34-34.9	0.67		

On Oct. 27, The Texas Co. met Stanolind prices in Oklahoma, on Oct. 28, in North Central Texas and on Jan. 15, 1931, in North Texas same as Stanolind in Wichita, Wilbarger, etc.

Humble Oil & Refining Co. Prices

Effective Oct. 28, 1930

In Ranger, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona fields all in Texas, same prices as Stanolind, which see above.

In North Texas, including Wichita, Wilbarger, Archer and Northern Young counties, same schedule as Stanolind in Wichita, Wilbarger, etc., effective Jan. 14.

Magnolia Petroleum Co.
(In Oklahoma, Kansas, North and East Central Texas)

Effective Oct. 28, 1930

Magnolia posts same prices in all three states as Stanolind, except these lower grades:

Below 26	$0.53	27-27.9	$0.61
26-26.9	0.57	28-28.9	0.65

In Wichita, Wilbarger, Archer, Northern Young, Clay and Montague counties, same prices as Stanolind in Wichita, Wilbarger, etc., effective Jan. 15.

Effective Oct. 28, 1930

Corsicana heavy.....$0.75
Luling..... 0.75
Mirando (Jan. 15, 1931)..... 0.69
Darst Creek, 60° and above..... 0.90

Carter Oil Co.

(Oklahoma and Kansas)

Oct. 27, 1930, same schedule as Stanolind, which see.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective Jan. 14, 1931

Hutchinson and Carson Counties:

Below 29	$0.43	35-35.9	$0.57
29-29.9	0.45	36-36.9	0.59
30-30.9	0.47	37-37.9	0.61
31-31.9	0.49	38-38.9	0.63
32-32.9	0.51	39-39.9	0.65
33-33.9	0.53	40 and above	0.67
34-34.9	0.55		

Gray County:

Below 29	$0.48	35-35.9	$0.62
29-29.9	0.50	36-36.9	0.64
30-30.9	0.52	37-37.9	0.66
31-31.9	0.54	38-38.9	0.68
32-32.9	0.56	39-39.9	0.70
33-33.9	0.58	40 and above	0.72
34-34.9	0.60		

Above prices met by Magnolia and The Texas Co. on Jan. 15 in Hutchinson, Carson and Gray counties.

Wheeler County: Posted by Magnolia Pet. Co. Effective Apr. 10. Humble withdrew Wheeler county postings Apr. 10.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

Effective Oct. 28, 1930

Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, Tex., also Lea County, N. Mex.

Below 25	$0.50	31-31.9	$0.64
25-25.9	0.52	32-32.9	0.66
26-26.9	0.54	33-33.9	0.68
27-27.9	0.56	34-34.9	0.70
28-28.9	0.58	35-35.9	0.72
29-29.9	0.60	36 and above	0.74
30-30.9	0.62		

Winkler and Pecos counties, Tex.:

Effective Oct. 28, 1930

Below 25	$0.55	31-31.9	$0.69
25-25.9	0.57	32-32.9	0.71
26-26.9	0.59	33-33.9	0.73
27-27.9	0.61	34-34.9	0.75
28-28.9	0.63	35-35.9	0.77
29-29.9	0.65	36 and above	0.79
30-30.9	0.67		

Oct. 28, 1930, The Texas Co. same prices in Crane, Upton, Winkler and Lea counties as Humble.

Oct. 28, Magnolia same prices in Winkler, Crane, pton, Howard, Glasscock and Mitchell counties.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective Oct. 28, 1930

Mirando (Jan. 15, 1931).....$0.69
Salt Flat..... 0.90
Darst Creek..... 0.90
Pettus, Bee County..... 1.10

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, Sabine, Cotton Valley, Sarepta and Carterville.

Effective Oct. 30, 1930

Below 29	$0.65	35-35.9	$0.92
29-29.9	0.69	36-36.9	0.95
30-30.9	0.73	37-37.9	0.98
31-31.9	0.77	38-38.9	1.01
32-32.9	0.81	39-39.9	1.04
33-33.9	0.85	40 and above	1.07
34-34.9	0.89		

Smackover, all grades.....$0.70
Bellevue (Oct. 30)..... 1.00
*Urania, La. (Oct. 30, 1930)..... 0.75
†East El Dorado (Calion) (Oct. 30)..... 0.70

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

Oct. 28, 1930, The Texas Co. same schedule in Louisiana as Standard.

Oct. 30, Magnolia met Standard schedule in Louisiana-Arkansas fields except it posts the same low grades in La.-Ark. as in Mid-Continent.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Oct. 30, 1930

Below 29	$0.54	31-31.9	$0.66
29-29.9	0.58	32 and above	0.70
30-30.9	0.62		

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Jan. 14, 1931

Grades A	$0.80	32-32.9	$0.85
Grades B:		33-33.9	0.87
Below 25	0.69	34-34.9	0.89
25-25.9	0.71	35-35.9	0.91
26-26.9	0.73	36-36.9	0.93
27-27.9	0.75	37-37.9	0.95
28-28.9	0.77	38-38.9	0.97
29-29.9	0.79	39-39.9	0.99
30-30.9	0.81	40 and above	1.01
31-31.9	0.83		

On Oct. 28, The Texas Co. posted same prices on Grades A and B Gulf Coast crude as Humble.

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland, Refugio county, and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity; 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F. Saybolt.
Sulfur: not over .4%.

Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

Roumanians Sell Gasoline At Bargain Prices

NEW YORK CITY, Feb. 21.—The petroleum industry is a clear cut example of unrestrained production, unrestrained refinery operations, and no market for output as is shown by the present condition in Roumania.

The following is from today's *Wall Street Journal.* "Following a breakdown in the restriction agreement among oil producers Roumanian oil prices have been reduced over 50 per cent and are well below the United States Gulf Coast export levels.

"The best gasoline is selling at Port Constanza at 3½ cents a gallon of which 1½ cents represents freight cost from refineries. Storage amounts to 213,000 tons (about 2,064,000 barrels) compared with 132,000 tons (about 1,-132,000 barrels) a year ago, and all tankage reservoirs are filled. All companies in Roumania are losing money with 1930 crude oil production in the country 18 per cent over 1929 and still high."

In Russia where the Government is starving its own citizens in order to export there is a shortage of kerosine. The authorities in Moscow have issued an order regulating the supply of kerosine and have ordered the police to search private houses in order to ascertain if unreasonable quantities are kept. All families having more than eight litres will be prosecuted.

Over 200 Petroleum Products—each a leader in its field—each manufactured to the highest standards—to meet the needs of *every* industry in a superior way.

Build your business on our reputation for satisfactory petroleum products

Empire Oil & Refining Company

Subsidiary Cities Service Co.

GENERAL SALES OFFICES—TULSA, OKLA.

NEW YORK PHILADELPHIA CLEVELAND CHICAGO ST. PAUL
KANSAS CITY ST. LOUIS FT. WORTH TORONTO

Crude Oil Prices (in Effect Feb. 23, 1931)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Oct. 27, 1930)

Salt Creek 29-29.9	$0.69
" 30-30.9	0.73
" 31-31.9	0.77
" 32-32.9	0.81
" 33-33.9	0.85
" 34-34.9	0.89
‡Salt Creek 35-35.9	$0.92
" " 36-36.9	0.95
" " 37 and above	0.98
Elk Basin	1.25
Grass Creek light	1.25
Big Muddy	1.00
Lance Creek	1.33
Rock Creek	1.01
Mule Creek	1.20
Rex Lake	$1.10
Pondera	1.45
‡Osage	0.85
‡Cat Creek, Mont.	1.25
Sunburst, Mont.	1.55
‡Hogback, N. Mex.	1.40
Artesia, N. Mex.	0.75

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

(Effective Sept. 15, 1930)

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach Inglewood* Olinda-Brea Canon*	Athens Rosecrans Dominguez	Elwood Terrace	Torrance Richfield	Whittier La Habra	Montebello	Coyote	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills Lost Hills	Coalinga	Wheeler Ridge	Playa del Rey	‡Kettleman Hills	Orcutt (Santa Maria) (Union Oil Co.)	Santa Paula (Ventura) (Union Oil Co.)	Venture Avenue (Associated Oil Co)
14-14.9**	$0.70	....	....	$0.70	$0.70	$0.70	$0.70	....	$0.55	$0.55	$0.55	$0.55	....	....	$0.55	$0.70	$0.70
15-15.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	....	....	.55	.70	.70
16-16.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	....	$1.65	.55	.70	.70
17-17.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	....	for	.55	.70	.70
18-18.9	.76	....		.76	.76	.71	.76	....	.55	.62	.62	.62	....	55*	.65	.75	.76
19-19.9	.82	....		.82	.82	.77	.82	....	.55	.70	.70	.70	....	gravity	.70	.80	.82
20-20.9	.88	....		.88	.87	.83	.87	....	....	.78	.78	.78	$0.74	and	.78	.85	.88
21-21.9	.94	....	F.o.b. ships	.94	.93	.90	.93	$0.92	....	.86	.86	.86	.77	over	.90	.90	.91
22-22.9	1.00	....	....	1.00	.98	.97	.98	.95	....	.94	.94	.94	.81	....	.95	.97	.94
23-23.9	1.07	....	....	1.07	....	1.05	1.04	1.01	....	1.02	1.02	1.02	.84	....	1.02	1.05	1.00
24-24.9	1.12	1.12	....	1.12	....	1.08	1.08	1.05	....	1.06	1.04	1.04	.87	....	1.08	1.07	1.05
25-25.9	1.17	1.17	....	1.17	....	1.11	1.12	1.09	....	1.10	1.06	1.06	.90	....	1.11	1.09	1.10
26-26.9	1.22	1.22	....	1.22	....	1.15	1.16	1.13	....	1.14	1.08	1.08	....	....	1.15	1.12	1.15
27-27.9	1.26	1.27	....	1.26	....	1.19	1.21	1.18	....	1.18	1.11	1.10	....	....	....	1.16	1.19
28-28.9	1.30	1.32	....	1.30	....	1.23	1.25	1.23	....	1.23	1.15	....	....	....	....	1.20	1.23
29-29.9	1.34	1.37	....	†1.34	....	1.26	1.29	1.28	....	1.29	1.19	....	....	....	....	1.24	1.27
30-30.9	1.38	1.42	....	†1.38	....	1.29	1.33	1.33	....	1.35	1.23	....	....	....	....	1.29	1.31
31-31.9	1.43	1.47	....	....	....	....	....	1.38	....	1.41	1.27	....	....	....	....	1.34	1.36
32-32.9	1.48	1.52	....	....	....	....	....	1.43	....	1.47	1.31	....	....	....	....	1.40	1.41
33-33.9	....	1.57	....	....	....	....	....	1.48	....	1.53	1.35	....	....	....	....	1.46	1.47
34-34.9	....	1.62	1.32	....	....	....	....	1.53	....	††1.59	1.39	....	....	....	....	....	1.53
35-35.9	....	1.66	1.39	....	....	....	....	1.58	....	††1.65	1.43	....	....	....	....	....	1.59
36-36.9	....	1.72	1.46	....	....	....	....	1.63	....	....	....	....	....	....	....	....	....
37-37.9	....	1.78	1.53	....	....	....	....	1.68	....	....	....	....	....	....	....	....	....
38-38.9	....	1.84	1.60	....	....	....	....	1.73	....	....	....	....	....	....	....	....	....
39-39.9	....	1.90	1.66	....	....	....	....	1.78	....	....	....	....	....	....	....	....	....
40-40.9	....	1.96	1.72	....	....	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	2.02	1.78	....	....	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	2.08	1.84	....	....	....	....	....	....	....	....	....	....	....	....	....	....

*Inglewood prices run only to 28.9 gravity; Olinda-Brea Canon to 31.9 gravity.
†Richfield crude only. ††These two grades apply on Lost Hills only.
**Standard does not contract for crude testing below 14 gravity, but pays 45c per barrel when purchased.
‡Union Oil Co.'s prices on Kettleman Hills crude are effective Sept. 15: 35-39.5, $1.10; 40-44.9, $1.20; 45-49.9, $1.35; 50-54.9, $1.50; and 55 and above $1.65.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Feb. 23	Feb. 16
Soda Ash Light 58% bags, cwt.	$1.20-1.38	$1.20-1.38
Silicate of Soda 60 deg. drums, cwt.	$1.75-1.90	$1.75-1.90
Silicate of Soda 40 deg. tank cars, cwt.	$0.70	$0.70
Silicate of Soda 40 deg. drums, cwt.	$1.00	$1.00
Sal Soda wks.	$0.90-1.20	$0.90-1.10
Caustic Soda 76% solid, cwt.	$2.25-2.50	$2.25-2.50
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00-12.50	$11.00-12.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10- 4.00
Liquid Chlorine, tank cars, wks., lb.	1.75	1.75

Compounders' Supplies

	Feb. 23	Feb. 16
Vegetable Oils		
Linseed carloads, spot, lb.	9.40	9.00
Tanks, spot	8.80	8.40
Soya Bean, Tank, coast, lb.	7.10	7.10
Oleic Acid		
Distilled, tanks, lb.	7.50	7.50
Distilled, bbls., lb.	8.375	8.375
Saponified, tanks, lb.	7.75	7.75
Saponified, bbls., lb.	8.625	8.625
Lard Oils		
Prime Winter Strained, lb.	12.50	12.50
Extra Winter Strained, lb.	9.50	9.50
Extra, lb.	9.25	9.25
Extra No. 1, lb.	8.75	8.75
No. 1, lb.	8.50	8.50
No. 2, lb.	8.25	8.25
Tallow oil, lb.	8.00	8.00
Neatsfoot Oil		
Pure, bbls., lb.	11.00	11.00
Extra, bbls., lb.	9.00	9.00
No. 1 bbls., lb.	8.75	8.75
Cold Pressed, lb.	15.25	15.25
Fish Oils		
Menhaden Oil Light Pressed, gal.	36–38	36–38
Light Pressed, tank cars, N. Y., gal.	28–30	28–30
Yellow bleached, gal.	39	39
Whale, extra winter bleached, gal.	80	80
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	42	41
Steam, distilled turpentine, Savannah, gal.	40	39
Gum turpentine, N. Y., gal.	42.50-43.50	42.50-43.50
Gum turpentine, f.o.b. cars Savannah, gal.	37.50-38.50	37.50-38.50
Wood Rosin, N. Y., bbl.	$4.56	$4.56
Wood Rosin F, Savn'h, bbl.	$4.86	$4.86
Gum Rosin B, N. Y., bbl.	$4.15	$4.35
Gum Rosin B, f. o. b. cars Savannah, bbl.	$3.35	$3.55
Rosin oil, pure, gal.	56	56
Rosin, oil, compounded, gal.	50	50
Pine Tar		
Kiln burnt, bbl.	$13.00-14.00	$13.00-14.00
Retort, bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	46–48	46–48

Ohio Standard Has Uniform Tool Layout for Tires

FOR mounting tires, and cold patching tubes at its service stations the Standard Oil Co. of Ohio has adopted a standard set of tools and materials. As published in the Dec. 24 issue of NATIONAL PETROLEUM NEWS, page 25, tires and tubes are being sold now in 700 Ohio Standard stations. Only cold patching will be done at the station, and all revenues from this accrue to the attendant.

Equipment for tire merchandising and repairing at each station consists of the following:

Two Atlas signs, 2 by 6 feet.

Two inserts for tires on display.

Two stands for displaying tires.

Twelve tube repair kits.

Twelve No. 5 plaster cord patches.

Six Universal balloon flaps.

Two high pressure flaps.

One can 048 cement, one-pint.

Fifty No. 100-A valve insides.

Twenty-five No. 641 valve caps.

Twenty-five No. 642 valve caps.

One garage kit.

Each station also has a tool board. On this board is a hammer, rubber mallet, cold chisel, center punch, awl, shears, stitcher, two tire spreaders, ring lifter, rim wrench, valve wrench, four-in-one valve tool, wire brush, tire iron, and a combination rim tool and tire iron.

At the class A and B stations there is one curb jack, and one rim tool for split rims. These are carried also at the larger lubrication stations which also have a big tire changing machine.

Six-Wheel Truck Picks Up Too Many Nails

The Columbia Petroleum Co., Columbia, S. C., has a six wheel truck, with a 500 gallon tank, for delivering fuel oil. Considerable trouble was experienced in keeping air in the two rear tires. Repair bills were mounting so the company investigated and found most of the punctures were caused by tacks or nails. It was found that the front set of rear wheels would turn up the nails and that the rear set would pick them up. Puncture proof tubes were put on the rear set of wheels and there has been no more trouble from these tires.

* * *

Appeal To Driver's Pride Keeps Trucks Clean

By appealing to the truck driver's pride the Columbia Petroleum Co., Columbia, S. C., has improved the appearance of its automotive equipment. Each truck carries the driver's name in the upper part of the cab door panel. The cost has been returned many times as the drivers take more pride in their trucks and keep them clean.

* * *

All Bulk Plant Operations Visible From Front Office

The Columbia Petroleum Co., Columbia, S. C., does not stand on ceremony in its office, which is at the bulk plant. The front office is occupied by R. H. Boardman, secretary of the company. From his office he can see the only entrance to the plant, as well as the truck loading racks. From the office of W. J. Keenan, president, the entrance may be seen as well as the yard for parking trucks.

* * *

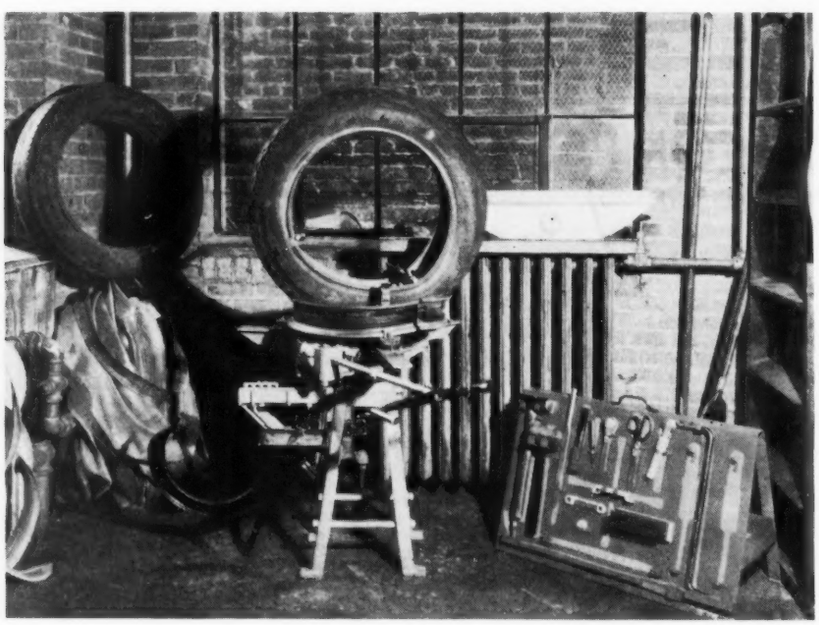
Station in City Sells 2000 Gallons of Kerosine

Kerosine sales at the main station of the Stoke Oil Co., in Roanoke, Va., average about 2000 gallons a month. Purchases are made largely by farmers for use in stoves and for lighting fires. A gasoline pump at the station is used for dispensing the kerosine. To prevent gasoline customers from stopping at the pump, the kerosine is colored blue.

* * *

Get Out The Monkey Suits For Your Station Men

Many of the swanky commercial hotels in the South have put their night clerks in tuxedoes. It takes a lot of courage now for the travel worn tourist, looking somewhat like a bum, to register when the clerk shines in his black and white monkey suit. Will the oil marketers get in line and make their station employes discard coveralls for tuxedoes at 6 p. m.?



The tire changing machine which is standard equipment at all of Ohio Standard's big lubrication stations. In the lower right hand corner is the tool board, and above is the water trough for testing tires

Trucks

and trailers—their operation and maintenance—how they lower oil transportation costs and how to sell from the truck seat—30 articles have been devoted exclusively to truck operation in the oil industry in 11 months' issues of National Petroleum News. They are listed here for your file reference:

1931

Railroad, truck and bus fight meets automotive counter attack Feb. 11, p. 96
Battles waging between motor vehicles and railroads Feb. 11, p. 31
Aluminum trailer carries 250 gallons more gasoline Jan. 28, p. 68
Aluminum truck tanks profitable where weight limit is factor Jan. 28, p. 25
Tank trucks need specially designed chassis Jan. 21, p. 67
New high speed, heavy duty truck has two separate motors Jan. 7, p. 36

1930

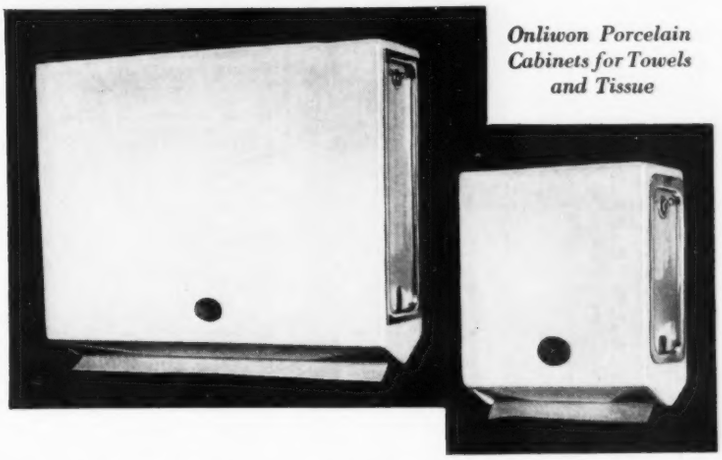
Foolproof equipment, good drivers, avoid truck accidents Dec. 31, p. 57
Fuel oil trucks operated at small cost Dec. 10, p. 81
General Motors survey shows delivery is big cost item to oil companies Dec. 3, p. 73
Cost of lettering on trucks should be charged to advertising Nov. 26, p. 67
Study of auto routes cuts truck delivery costs Nov. 19, p. 68
Semi-trailers deliver more gasoline with fewer pieces; what one company has found Nov. 12, p. 267
Operating costs; trucks cut bulk station duplications, stocks Nov. 12, p. 260
Has world's largest tank truck Nov. 12, p. 259
Tank truck of yesterday, today, tomorrow Nov. 12, p. 253
Use of aluminum grows in transportation equipment Nov. 12, p. 137
Trucks as rolling kitchens help sell liquefied gas Oct. 29, p. 122
Has Diesel-powered tank truck Oct. 1, p. 77
Aluminum truck tanks pass fire, drop, hydrostatic tests Sept. 10, p. 23
Truck design discussed at A.P.I. motor group meeting Sept. 10, p. 33
Three-unit tractor-semitrailer cuts mileage costs Aug. 27, p. 85
Vapor locking tendencies of automotive fuel systems Aug. 20, p. 64
New York tank racket to be reopened by tank company Aug. 13, p. 36
Trailer made from old Ford is sturdy July 30, p. 60
Tail light on truck trailer is effective July 30, p. 62
Accounting of truck costs based on actual expenses July 30, p. 99
Trucks haul tankcar of gasoline per day June 25, p. 105
Interstate war in southwest involves trucks May 14, page 30
Refiner-Marketer repairs own trucks in own repair shop Apr. 23, p. 77

Back copies of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page. Libraries in the larger cities generally keep back files of National Petroleum News complete.

National Petroleum News

Main Office: 1213 West Third St.
Cleveland, Ohio

HOW SAFE
ARE YOUR WASHROOMS?



Onliwon Porcelain Cabinets for Towels and Tissue

Protect the health of the motorists who stop at your service stations, as well as your own employés. Your first consideration is to avoid the spread of contagious diseases and infections at your stations and rest rooms, and at your plant washrooms. Dangers of contagion are rampant through the use of the common, insanitary cloth towels and ordinary harsh toilet paper.

Guard public health by equipping your washrooms with *Onliwon Paper Towels* and *Toilet Tissue*, protected by Onliwon Cabinets from dust, dirt and other contamination.

Onliwon Toilet Tissue, interfolded, is strong, pure and non-irritating. It passes every hygienic test. Onliwon Paper Towels, besides being sanitary, really save you money. Double-folded, which gives them double strength and double absorbency with 10% to 58% more surface area.

● Onliwon Cabinets promote economy as well as guard health. They will not release more than one towel or two sheets of toilet paper at a time. Write today for full information to the A. P. W. Paper Co., Albany, N. Y.

A. P. W. is also the largest manufacturer of single fold towels as well as the oldest manufacturer of roll toilet tissues.

A.P.W.

TRADE MARK REGISTERED IN U.S. PATENT OFFICE

ONLIWON PAPER TOWELS AND TOILET TISSUE

Pioneers For Cleanliness Since 1877

PENNSYLVANIA
MOTOR OILS
Buyers Specifications or Ours
Pennsylvania Quality at
Lowest Prices in Years
Write or Wire
INDUSTRIAL OIL CORP.
Warren, Pa.

Transactions in Oil Shares on New York Stock Exchange

1929 High	1929 Low	1930 High	1930 Low	Listed Shares	Par Value	Company	Div. Rate	Last Paid	Transactions Week Ended Feb. 21 Sales	First	High	Low	Last	Change§
42⅝	17½	42¼	16½	922,075	N.P.	Amerada Corp.	50cQ	Jan. 30, 31	1,600	19¾	20	18¾	20	— ⅝
64¾	12½	37	5¼	209,180	N.P.	American Republics Corp.	....	.....	4,700	10	11½	9¼	11¼	+ 1⅜
47¼	34½	51	30	2,240,000	$25	Associated Oil	50cQ	Dec. 31, 30	30	31	31	31	31	+ 1
77⅛	30	51⅜	16⅝	2,683,868	25	Atlantic Refining Co.	‡25cQ	Dec. 15, 30	27,800	22⅜	22⅞	21⅜	22½	+ ½
49½	20	34	8⅜	2,257,108	25	Barnsdall Corp. A.	25cQ	Feb. 16, 31	18,000	13½	13¾	12¾	13¾	+ ⅜
34½	25	35	21	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	.....	.....	.....	.....	.....	.....
32⅛	12½	20⅜	8¼	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	600	9⅞	10	9⅞	10	0
37⅜	18	30½	7⅜	4,610,258	N.P.	Continental Oil (Delaware)	....	.....	19,100	10⅞	11⅜	10½	11¼	+ ½
94¾	42¼	71⅝	22⅜	410,857	$100	General Asphalt Co.	$1Q	Dec. 15, 30	32,200	37⅞	45⅛	37½	43⅜	+ 5
109	26	116½	29¼	250,000	100	Houston Oil	....	.....	48,900	52½	65	52⅛	64	+12⅛
..	..	10¼	6⅜	.....	..	Houston Oil, new	....	.....	40,400	11	13½	11	13½	+ 2⅜
53	13¾	28⅜	3	699,066	10	Indian Refining	....	Dec. 15, 20	3,100	4¼	4¼	3⅜	4	— ½
51¼	11½	27¾	3½	568,816	10	do certificates	....	.....	.....	.....	.....	.....	.....	.....
38⅜	16½	29½	21¼	3,994,150	N.P.	Lago Oil & Transport	....	Aug. 2, 27	.....	.....	.....	.....	.....	.....
18	7	12	3½	1,187,701	N.P.	Louisiana Oil Refining	....	.....	700	4⅛	4¼	4⅛	4¼	+ ⅛
100¼	80	89½	60	40,000	$100	do pfd.	$1.62½Q	Feb. 14, 31	.....	.....	.....	.....	.....	.....
18½	5⅞	10⅜	1¾	330,000	N.P.	Maracaibo Oil Exploration	....	.....	.....	.....	.....	.....	.....	.....
295	176	182	150	459,428	$100	Mexican Petroleum	$3Q	Jan. 20, 31	.....	.....	.....	.....	.....	.....
105	102	100	100	120,000	100	do pfd.	$2Q	Jan. 20, 31	.....	.....	.....	.....	.....	.....
69⅜	9¼	37	9¼	1,244,383	N.P.	Mexican Seaboard Oil	....	Oct. 15, 24	95,300	17½	19⅜	16¾	19¼	+ 1½
39⅞	22⅛	33	11	1,899,138	N.P.	Mid-Continent Petroleum	50cQ	Feb. 16, 31	10,800	15½	15⅞	14½	15¾	+ ¼
3⅝	¾	2⅛	¾	908,171	N.P.	Middle States Oil ctfs.	....	.....	.....	.....	.....	.....	.....	.....
..	..	32	16	6,708,086	N.P.	Ohio Oil Co.	50cQ	Dec. 15, 30	9,900	17½	17½	16¾	17	— ¾
69	40¼	64¼	42	1,000,000	$50	Pan American Petrol. & Trans.	....	Oct. 20, 27	100	35	35	35	35	+ 1
69¼	40½	67½	32	2,422,221	50	do B	....	Oct. 20, 27	200	34	35½	34	35½	+ ½
15¼	3	12¾	1¾	199,370	N.P.	Panhandle Prod. & Refg.	....	.....	1,400	3⅞	3⅞	3	3½	— ¼
76	47½	80	47½	25,666	$100	do pfd.	....	July 2, 23	.....	.....	.....	.....	.....	.....
..	..	27½	6	2,937,900	N.P.	Petroleum Corp. of America	37½cQ	Dec. 31, 30	12,400	9½	10	9¼	10	+ ⅜
47	24¼	44¾	12	2,670,089	N.P.	Phillips Petroleum Co.	50cQ	Jan. 2, 31	58,700	14¼	14⅞	13⅝	14⅝	+ ⅛
3⅜	1	2½	½	1,184,917	$25	Pierce Oil Corp.	....	.....	2,100	⅞	⅞	⅞	⅞	0
51½	20	52	7½	150,000	100	do pfd.	....	Feb. 1, 22	100	13½	13½	13½	13½	0
5⅞	⅛	7⅛	1⅜	2,500,000	N.P.	Pierce Petroleum Corp.	10c	Feb. 16, 31	3,700	2¾	2⅞	2¾	2⅞	0
65⅝	40½	54	11¼	2,435,670	$25	Prairie Oil & Gas Co.	50cQ	Dec. 31, 30	14,000	15⅝	17⅛	15¼	17¾	+ 2¾
65	45	60	16⅜	4,050,000	25	Prairie Pipe Line Co.	‡75cQ	Dec. 31, 30	18,000	22⅜	24¼	22¼	24	+ 1¾
25⅛	4	31	1	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 23	300	5	5	4⅞	4⅞	— ⅛
46½	25⅛	38	11¼	56,907	50	do pfd.	....	May 4, 25	30	15½	15½	15½	15½	— ⅛
30⅝	20	27⅛	7⅝	3,038,370	25	Pure Oil Co.	....	Sept. 1, 30	6,700	10½	10⅝	10	10½	— ⅛
116	108	114½	90½	130,000	100	do 8% pfd.	$2Q	Jan. 2, 31	60	99	99½	98½	99½	+ ⅛
49⅝	22⅜	28¼	4¾	2,891,735	25	Richfield Oil (California)	....	Sept. 1, 30	70,300	4⅞	5⅛	4⅞	4⅞	— ⅛
42½	15	25⅜	5	1,235,270	N.P.	Rio Grande Oil Co.	....	July 25, 30	12,900	8⅜	10¼	8	10¼	+ 2
64	43¾	56½	37⅜	951,310	$13.40	Royal Dutch (N. Y. shares)	$1.3404	Jan. 31, 31	4,300	41⅜	41¾	40¾	41½	— ¼
55⅛	43⅜	48⅜	26	77,492	£2	Shell Trans. & Trading	96.6c	Jan. 23, 31	.....	.....	.....	.....	.....	.....
31¾	19	25½	5¼	13,069,076	N.P.	Shell Union Oil Corp.	....	June 30, 30	19,200	9½	10	9¼	9¾	0
..	..	106¼	62	400,000	100	do pfd.	$1.37½Q	Jan. 2, 31	600	75	78	74	74	+ 1½
40⅜	15	37	5¾	869,255	10	Simms Petroleum Co.	....	Sept. 15, 30	1,800	9½	9⅞	9⅛	9⅜	0
45	21	32	9¾	5,455,665	N.P.	Sinclair Consolidated Oil Corp.	25cQ	Jan. 15, 31	32,900	12⅞	13	12¼	12⅞	0
111	103	112¾	86	154,685	100	do pfd.	$2Q	Feb. 14, 31	100	102½	102½	102½	102½	0
46⅛	42	42	10⅛	1,097,650	$25	Skelly Oil Co.	50cQ	Dec. 15, 30	11,400	10½	10½	8⅞	10⅜	— ⅛
..	..	99¾	43	120,000	100	do pfd.	$1.50Q	Feb. 1, 31	700	54	54	51	52½	— 1½
..	..	106	98	750,000	100	S. O. Export Corp. pfd.	$2.50S.A.	Dec. 31, 30	400	103¾	104⅜	103¾	104	0
81¼	51¾	75	42¼	13,016,434	N.P.	S. O. California	62½cQ	Dec. 15 30	16,200	49⅝	50¾	48⅝	50¼	+ ¾
..	..	49	14⅜	320,000	$25	S. O. Kansas	50cQ	Dec 15, 30	1,200	16½	17⅜	16⅜	17	+ ¼
83	48	84⅛	43¼	25,443,643	25	S. O. New Jersey	‡25cQ	Dec. 15, 30	72,600	50¼	51⅜	48½	51	+ 1⅜
48⅜	31⅝	40⅜	19¾	17,809,530	25	S. O. New York	40cQ	Dec. 15, 30	23,600	25½	25¾	25	25¾	+ ⅛
86½	55	70	39	1,416,911	N.P.	Sun Oil Co.	‡25cQ	Dec. 15, 30	200	....	45	44¼	45	0
105½	100	107¾	97¾	100,000	$100	do pfd.	$1.50Q	Dec. 15, 30	100	104	104	104	104	0
24	5¼	9¾	¾	1,026,979	N.P.	Superior Oil Corp.	.....	.....	1,900	1⅝	1¾	1½	1¾	+ ⅛
71⅛	50	60½	28¼	9,850,724	$25	The Texas Corp.	75cQ	Jan. 1, 31	34,300	34	34⅞	32¾	34⅞	+ ⅞
23⅞	9¼	14½	4	929,947	10	Texas Pacific Coal & Oil	....	Dec. 31, 29	2,300	5⅜	6	5¼	6	+ ½
23½	10	17¾	5⅜	5,881,980	N.P.	Tide Water Associated Oil	30cS.A.	Feb. 16, 31	11,300	8	8¼	7¾	8⅛	+ ⅛
90⅞	74¼	89¾	56	732,550	$100	do pfd.	$1.50Q	Jan. 2, 31	300	65½	65½	63½	65½	+ 2½
40	14	31	13	2,191,820	N.P.	Tide Water Oil Co.	20cQ	Dec. 31, 30	300	12⅞	13⅜	12⅞	13⅜	+ ⅜
97½	85⅛	94⅛	71	199,443	$100	do pfd.	$1.25Q	Feb. 16, 31	300	80⅛	80⅛	80	80	0
..	..	24	12⅛	3,339,150	N.P.	Transcontinental Oil	....	May 1, 30	.....	.....	.....	.....	.....	.....
57	42⅜	50	20⅛	2,201,008	$25	Union Oil Co. (California)	50cQ	Feb. 10, 31	5,600	25⅜	25½	24⅛	25⅜	— ⅛
..	..	38⅛	23	1,254,048	N.P.	Union Tank Car Co.	40cQ	Dec. 1, 30	1,100	23¼	23½	23	23⅛	0
42⅞	15	27	4⅛	777,603	N.P.	Warner Quinlan Co.	....	July 3, 30	500	6½	6½	6⅜	6½	0
38	25	29⅛	26	490,000	N.P.	White Eagle Oil & Refg.	....	Apr. 20, 30	.....	.....	.....	.....	.....	.....
29¾	12⅛	21	6⅛	428,967	N.P.	Wilcox Oil & Gas Co.	....	May 10, 28	.....	.....	.....	.....	.....	.....

*New high †New low ‡Also extra s-Stock §From close of preceding week. Total sales 757,320

Pittsburgh Stock Exchange

Transactions Week Ended Feb. 20, 1931

	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas pfd.	25	7	7	7	0
Devonian Oil	380	5	5	5	0
Lone Star Gas	1,309	27½	26¾	27¼	0
Plymouth Oil	1,050	19	16½	19	+2⅜
Shamrock Oil & Gas	520	9	9	9	0
Waverly Oil Wks. A	50	7½	†7½	7½	— ½
Western Pub. Ser.	7,510	14½	12¼	14⅜	+1⅜

†New low.

Pittsburgh Curb Market

Transactions Week Ended Feb. 20, 1931

	Sales	High	Low	Last	Change
Darby Petroleum.	650	4½	4½	4½	+ ½

French Morocco imported 134,000 barrels of gasoline from the United States the first half of 1930, or one-third of its total imports of this product.

5500 Travel by Air Daily in 1930

WASHINGTON, Jan. 30.—The release of aviation from the handicap of uncontrolled and disorganized high pressure promotion, the Department of Aeronautics of the Department of Commerce, points out, was one of the most constructive events in commercial aeronautics in 1930.

That year found this country with an airway system unequalled in any other nation in the world. We have 15,000 miles of airways, lighted and equipped with beacon lights at 10 to 15-mile intervals and intermediate landing fields for day and night use at 20 to 40-mile spacings.

The Department of Commerce operates 55 radio range beacons, which send out 22,000 miles of radio direction signals 24 hours a day.

It also has 51 radio broadcast stations, furnishing weather information on half-hour intervals to planes in flight.

There are 100 air routes for passengers, mail and express in this country, and 20 American-owned and operated air routes to Canada, Mexico, the West Indies and Central and South America.

More than 102,000 miles are flown daily in the United States and 14,000 miles on our foreign routes.

There are 7500 licensed airplanes and 15,500 licensed pilots.

It is expected that the final figures for 1930 will show more than 2,000,000 passengers carried and 140,000,000 miles flown in that year.

The new air mail enactment which places mail on air routes formerly exclusive to passengers, and vice versa, is expected to increase air passenger travel and for mail and merchandise this year.

N.P.N. Service Record

Some of the requests for information, data and advice, which were taken care of in various National Petroleum News offices in the past week are:

Indiana ice refrigerating company told B.T.U. content of Mid-Continent fuel oil, and furnished other information on fuel oils.

* * *

Michigan oil jobber told where he may obtain ideas for a talk on refining of crude.

* * *

Nebraska oil broker furnished data on Schultz for lube oils and referred to N.P.N. article in Sept. 10, 1924, issue describing this process.

* * *

Kansas oil jobber told where he may have tests made to obtain specifications of various advertised motor oils and told why a motor knocks less when an anti-knock gasoline is used.

* * *

Pensylvania inquirer told the cost of building a refinery, told the difference between gasoline and natural gasoline and furnished names and addresses of 10 large oil companies whose products he might handle if he builds service station.

* * *

Pennsylvania inquirer furnished financial report on oil company operating in South America.

* * *

Texas inquirer furnished information on stock of oil company quoted in N.P.N. financial tables.

* * *

Minnesota oil jobber told where to write to obtain newly adopted S. A. E. numbers for greases.

* * *

German oil distributor furnished names and addresses of seven manufacturers of Pennsylvania neutrals of specifications he quoted; told about margin in Fahrenheit between flash points between two methods he mentioned, and given explanation of differences in specific gravities of Pennsylvania cylinder stocks on which he has received refiners' quotations.

* * *

Trading agency of India furnished names and addresses of 28 refiners who make fuel oil from the various crudes the agency designated.

* * *

New York office of English engineering company furnished with names and addresses of three service station journals.

* * *

Kansas oil marketer furnished with references to N. P. N. articles on college boys operating service stations.

* * *

Nebraska marketer told where he may buy automatic or coin-in-the-slot gasoline pumps.

* * *

New Jersey oil jobber furnished name of manufacturer making gear cleaner.

* * *

Kansas oil company given name and address of company making power-driven pumps for gasoline dispensing units.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

DESIGNING ENGINEER, 33, married, three years general refinery experience, piping; previous 11 years, high pressure boiler designing and supervision. Location, Middlewest. Address Box 670.

EXPERIENCED MARKETER, college graduate, 35, thoroughly experienced in marketing of both light and heavy oils wholesale and retail—having specialized in marketing automotive oils to distributor trade and the development of new territory. Best references. Can locate anywhere. Address Box 652.

REFINERY SUPERINTENDENT—Young college graduate. Can refine any crude, successfully operate any modern refinery, organize and train own personal, supervise construction and install efficient maintenance and operating procedure. Considerable sales experience especially lubricants and fuels. Will go anywhere. Address Box 634.

TWELVE YEARS EXPERIENCE IN SALES AND EXECUTIVE capacity. Majority as general sales manager. Well acquainted all branches refinery and station sales of all petroleum products. Will consider Division managership. Sales managership, or possibly part ownership in going oil concern. Answer Box 649.

DISTRICT SALES MANAGER—Industrial oil salesman desires connection. Twelve years selling, four years district manager. Go anywhere at once, with reliable company with future. Excellent references. Single, Salary secondary consideration. Address Box 639.

SERVICE STATION MANAGERS. If your marketing cost is too great will you consider an experienced leader, 30 years of age, who can produce quick results? Salary commensurate only with results. Address Box 658.

Situations Open

LUBRICATING OIL SALESMAN who is familiar with jobbing trade in Rocky Mountain states, also Nebraska, Iowa and Northern Illinois. Write giving full information regarding past experience, also salary expected. References required. Address Box 665.

SALES EXECUTIVE

A large aggressive oil company operating in the South and Middle Atlantic States requires the services of a sales executive to direct the marketing of specialty products.

Should have knowledge of insecticides. Complete details, or no consideration will be given answers. Salary only.

ADDRESS BOX 668

Miscellaneous

WHAT IT COSTS

"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities."

"Miscellaneous" classifications, set in type this size without border—10 cents a word. Minimum charge, $3.00.

"Position Wanted"—5 cents a word. Minimum charge $1.00.

Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Wanted to Buy

GASOLINE WANTED

New Company organized in Michigan wants to connect with Refinery that can supply 60-62, 400 E. P. with good Benzol equivalent and Ethyl.

DERRICK OIL & GAS COMPANY
Michigan Terminal Whse.
Dearborn, Michigan

MIDWEST JOBBING BUSINESS WANTED—Submit 1930 gallonage and operating statement. Information held strictly confidential and data returned if not interested your proposition. Alfred Boudreau, 402 Mayo Bldg., Tulsa, Okla.

WANTED TO BUY:

Sufficient used equipment with which to build a two (12,000 gallon each) tank bulk station.

Burkhard Motor Co.,
Winner, South Dakota

For Sale

Best offer takes SIX TEN-GALLON AMERICAN VISIBLE PUMPS. Address Box V, Port Chester, N. Y.

VISIBLE PUMPS
FOR SALE

10 gallon "Milwaukee" positive stop on good condition.

TRUCK TANK

515 capacity—4 compartment with 1½" faucets.

Bratt & Lang Oil Company,
Racine, Wis.

Business Opportunities

OLD ESTABLISHED JOBBING BUSINESS

2,000,000 gallons sales for 1930. Will consider financial connections with small western refinery or a sale.

ADDRESS BOX 669

MAKE THIS OFFICE TULSA HEADQUARTERS

Will buy petroleum products for your account Small commission.

Wire or Write for Details

DALE W. MOORE

405 Philtower Bldg., Tulsa, Okla.
Telephones: 3-4177 and 3-4178.
L. D. 136

Standard Oil Stocks on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Outstanding Shares	Par Value	Companies	Div. Rate	Last Paid	Transactions Week Ended Feb. 21 Sales	First	High	Low	Last	Change§
18¾	13½	18½	12¼	.....	£1	Anglo-Amer. Oil voting stk. ctfs..	.....	June 5, 29	.....	.....	.....	.....	.....	.....
17⅛	11	19	12	.....	£1	do non-voting stk. ctfs.....	.....	June 5, 29	.....	.....	.....	.....	.....	.....
2½	¾	1	⅜	500,000	N.P.	Atlantic Lobos Oil.....	.....	.....	100	⅛	⅛	⅛	⅛	— ⅜
4⅛	1	1½	⅛	200,000	$50	do pfd.....	.....	.....	.....	.....	.....	.....	.....	.....
46½	25	25	11¼	40,000	25	Borne Scrymser Co.....	$1S.A.	Oct. 15, 30	.....	.....	.....	.....	.....	.....
74¼	55	69	39⅞	200,000	50	Buckeye Pipe Line Co.....	$1Q	Dec. 15, 30	100	45⅛	45⅛	45⅛	45⅛	+ ⅛
210	130	184⅞	100¼	120,000	25	Chesebrough Mfg. Co.....	‡$1Q	Dec. 30, 30	.....	.....	.....	.....	.....	.....
11¾	5⅝	7⅝	3	.....	N.P.	Creole Petroleum Co.....	.....	.....	2,800	3⅜	3⅜	3⅛	3¼	0
75¾	40	65¾	20¼	30,000	$50	Cumberland Pipe Line Co.....	$1Q	Dec. 15, 30	100	25	25	25	25	+ 2½
70½	42	54¾	26	50,000	100	Eureka Pipe Line Co.....	$1Q	Feb. 2, 31	100	28	29¾	28	28	+ 1
...	...	6¾	2½	280,000	N.P.	Galena Oil Corp. w.i.....	.....	.....	.....	.....	.....	.....	.....	.....
...	...	37¼	23⅛	.....	N.P.	General Petroleum Corp. w.i.....	.....	.....	.....	.....	.....	.....	.....	.....
128	74½	119	57¼	2,974,645	$25	Humble Oil & Refg. Co.....	‡50cQ	Jan. 1, 31	4,000	66½	67¾	63⅜	67¾	— ¼
41	22	30	15	26,490,741	N.P.	Imperial Oil, Ltd.....	12½cQ	Dec. 1, 30	2,500	17¼	17¼	16¾	17⅛	+ ⅛
42⅛	26	41	14½	300,000	$10	Indiana Pipe Line Co.....	50cQ	Feb. 14, 31	500	20⅝	21	20⅝	20¾	— ¼
29⅜	15	24	11⅜	14,247,880	N.P.	International Petroleum Co.....	25c	Dec. 15, 30	11,200	14¼	14⅜	14	14¼	0
25⅞	10½	22⅜	11½	509,000	$12½	National Transit Co.....	25cQ	Dec. 15, 30	400	13⅛	13½	13⅜	13½	— ⅜
17¾	10	21	10⅛	100,000	10	New York Transit Co.....	40cQ	Jan. 15, 31	500	11⅛	11⅛	10¼	10¼	— 3¼
63	41	54	26¼	40,000	50	Northern Pipe Line Co.....	$2S.A.	Jan. 2, 31	250	30	30	30	30	0
105½	103¾	108	100⅜	600,000	100	Ohio Oil pfd.....	$1.50Q	Dec. 15, 30	200	100⅞	100⅞	100⅞	100⅞	— 1⅛
44½	18⅝	32	12	400,000	25	Penn Mex. Fuel Co.....	$1	Dec. 15, 30	.....	.....	.....	.....	.....	.....
50	29	33	4⅞	160,000	25	Solar Refining Co.....	.....	Dec. 20, 29	200	7⅜	7⅜	7	7	— ½
23½	13	20⅛	6¾	100,000	10	Southern Pipe Line Co.....	$5	Dec. 1, 30	100	12⅞	12⅞	12½	12½	0
60¼	35⅛	45⅞	18	1,200,000	25	South Penn Oil Co.....	50cQ	Dec. 31, 30	2,400	21½	21¾	19⅛	19½	— 2¼
70	45	64	32	35,000	50	Southwest Pa. Pipe Lines.....	$1Q	Dec. 31, 30	50	35	35	35	35	— 1
63	45	59¼	30	16,850,587	25	S. O. Indiana.....	62½cQ	Dec. 15, 30	23,900	34⅞	35⅜	34½	35⅜	+ ½
46⅞	29	40½	18⅞	2,577,124	10	S. O. Kentucky.....	‡40cQ	Dec. 31, 30	5,300	23⅜	23⅜	22⅛	22¾	— ½
50¼	40	48⅞	34	188,159	25	S. O. Nebraska.....	62½cQ	Dec. 20, 30	.....	.....	.....	.....	.....	.....
129	60	108½	43¼	560,000	25	S. O. Ohio.....	62½cQ	Jan. 2, 31	200	54½	55	54	54	— ⅞
...	...	...	...	120,000	100	do 5% pfd.....	$1.25Q	Jan. 15, 31	20	104	104	104	104	0
124½	113½	122	115¼	70,000	100	do 7% pfd.....	$1.75Q	Dec. 1, 30	.....	.....	.....	.....	.....	.....
18	5⅛	10	4	34,158	25	Swan Finch Oil Corp.....	.....	Jan. 15, 29	.....	.....	.....	.....	.....	.....
133¾	75⅛	97⅞	45⅜	5,139,887	25	Vacuum Oil Co.....	‡$1Q	Dec. 20, 30	5,200	64½	67	64½	66⅛	+ 1⅛

*New high †New low ‡Also extra §From close of preceding week.

Independent Oils on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Par Value	Companies	Transactions Week Ended Feb. 21 Sales	First	High	Low	Last	Change§
.72	⅛	⅜	⅛	$1	Amer. Contr. Oilfields	.....	.....	.....	.....	.....	.....
8⅝	1⅞	4½	½	5	Amer. Maracaibo.....	11,600	⅞	1	⅞	1	0
4¾	1	1⅜	1⅛	10	Argo Oil.....	.....	.....	.....	.....	.....	.....
26	3¾	16¾	4⅝	N.P.	Arkansas Nat. Gas...	1,300	6¼	6½	6¼	6¼	0
24¾	6½	16⅝	4¾	N.P.	do Class A.....	11,200	6¼	6¾	6⅛	6¼	— ⅛
9	4	8⅛	6¼	10	do pfd.....	200	6⅞	6⅞	6⅞	6⅞	+ ⅛
70	50	28½	13½	N.P.	British American Oil..	.....	.....	.....	.....	.....	.....
4⅞	⅞	2¾	⅝	¼	Carib Syndicate.....	21,700	2	2⅜	1½	1⅝	— ¼
68½	20	44¼	13⅛	N.P.	Cities Service.....	175,000	19⅝	20¾	19¼	20	+ ½
99¼	84	93⅞	52	100	do pfd.....	1,000	83⅝	84½	83½	84½	+ ⅞
9¼	8	9	7¼	10	do pref. B.....	.....	.....	.....	.....	.....	.....
96	81	89⅞	80	100	do pref. BB.....	.....	.....	.....	.....	.....	.....
1½	¼	⅛	⅛	1	Colombia Syndicate..	11,100	¼	⅛	¼	⅛	+ ⅛
15	3⅞	8¼	1⅛	N.P.	Colon Oil Corp.....	4,100	2¼	2⅞	2¼	2⅞	+ ½
...	...	21	3⅝	N.P.	Columbia Oil & Gas..	2,800	6	6⅜	6	6⅜	+ ⅜
11⅜	2½	5⅞	2	10	Consolidated Royalty	500	2	2	2	2	0
135	42	74¾	1½	N.P.	Cosden Oil Co.....	1,400	2½	2½	2¼	2¼	— ¼
87	55	70	10¼	100	do pfd.....	.....	.....	.....	.....	.....	.....
2½	¼	1	¼	N.P.	Crown Central Pet...	4,400	½	½	½	½	— ⅛
11½	4	..	..	N.P.	Crystal Oil.....	.....	.....	.....	.....	.....	.....
51⅛	51⅛	..	..	100	do pfd.....	.....	.....	.....	.....	.....	.....
26	6½	13½	4¼	N.P.	Darby Petroleum.....	.....	.....	.....	.....	.....	.....
..	..	21¾	21½	N.P.	do new.....	.....	.....	.....	.....	.....	.....
11	2	11	2	N.P.	Derby Oil & Refg.....	2,000	5	5	4	4⅛	— ⅜
44	17	60	30	N.P.	do pfd.....	.....	.....	.....	.....	.....	.....
...	...	12	12	10	Devonian Oil.....	.....	.....	.....	.....	.....	.....
209	115	166⅞	58½	$25	Gulf Oil Corp.....	6,900	69⅞	71⅞	67⅝	70½	+ ½
7½	1⅜	4	2¼	N.P.	Homaokla Oil.....	.....	.....	.....	.....	.....	.....
..	..	47½	12¾	N.P.	Indian Territory A...	600	16⅞	16⅞	16⅝	16⅜	+ ⅛
..	..	53½	12⅝	N.P.	do B.....	100	16⅞	16⅞	16⅞	16⅞	+ ⅞
2⅞	⅜	1¾	⅜	10	Intercontinental Pet..	3,800	1/16	½	1/16	1/16	— 1/16
3⅝	1¼	3	⅞	N.P.	Kirby Petroleum.....	500	1	1	1	1	0
6⅛	1	4¾	½	N.P.	Leonard Oil & Dev...	2,800	⅞	⅞	⅞	⅞	+ ⅛
38⅞	18	29	5	N.P.	Lion Oil Refg.....	100	6½	6½	6½	6½	+ ½
67⅞	28	55⅞	19⅝	N.P.	Lone Star Gas.....	3,200	27	27½	26⅜	27¼	+ ¼
..	..	31	5½	$25	MacMillan Petrol.....	.....	.....	.....	.....	.....	.....
2⅞	¼	½	⅜	1	Magdalena Synd.....	1,400	⅜	⅜	1/16	1/16	— 1/16
38½	14	16	3	N.P.	Margay Oil.....	.....	.....	.....	.....	.....	.....
6⅜	2¼	7½	1¾	N.P.	Mexico Ohio Oil.....	300	1⅝	1⅝	1⅝	1⅝	+ ⅛
..	..	11⅞	2¼	N.P.	Middle States A v.t.c.	1,500	3¼	4⅛	3⅛	4⅛	+ ⅞
..	..	6	¾	N.P.	do Class B v.t.c.	800	1⅛	1¼	1⅛	1¼	0
42	8	36¼	5	5	Missouri-Kansas F.L.	5,700	6⅞	6⅞	6⅝	6⅝	— ⅜
1½	¼	¾	⅜	1	Mountain & Gulf Oil..	.....	.....	.....	.....	.....	.....
22⅞	7	12⅛	4½	10	Mountain Producers..	2,800	5½	5⅝	5⅜	5½	0
43⅞	24	41⅜	19⅞	N.P.	Nat. Fuel Gas.....	7,700	24⅞	24⅞	24	24⅜	— ⅝
5	2¼	3½	1⅛	$5	New Bradford Oil.....	500	1⅜	1⅜	1⅜	1⅜	+ ⅛
4⅜	3⅛	3⅛	2⅛	10	New England Fuel.....	.....	.....	.....	.....	.....	.....
24½	11⅛	16⅞	4	25	N. Y. Pet. Royalty....	.....	.....	.....	.....	.....	.....
18½	6⅛	11¼	2⅛	N.P.	North Central Texas	.....	.....	.....	.....	.....	.....
19¼	8⅝	11⅝	3⅞	N.P.	Oilstocks Ltd. A.....	600	4½	4½	4⅜	4⅜	— ⅛
18¼	8½	11½	4⅜	N.P.	do B.....	.....	.....	.....	.....	.....	.....
26⅝	12⅛	19½	6½	N.P.	Pacific Western Oil...	2,900	11½	15	11	14⅞	+ 4½
3½	½	2½	¼	N.P.	Pandem Oil.....	3,700	1/16	½	⅜	¼	+ 1/16
10½	2¼	4⅜	1	N.P.	Pantepec Oil.....	500	1½	2	1½	2	+ ½
25½	13⅛	15	13⅛	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
28	17	29	19⅛	N.P.	Petroleum Corp.....	.....	.....	.....	.....	.....	.....
...	...	5⅞	½	...	do warrants.....	600	1	1	¾	¾	+ ⅛
37	22	27½	16¼	N.P.	Plymouth Oil.....	2,400	16⅞	19	16⅞	18⅝	+ 1¾
16	9	10½	3	$5	Red Bank Oil.....	.....	.....	.....	.....	.....	.....
8½	1⅛	5⅜	1	N.P.	Reiter-Foster Oil.....	600	1⅛	1⅛	1⅛	1⅛	0
25¼	19	23½	7	25	Richfield Oil pfd.....	1,300	7¾	7¾	6⅝	6⅝	— 1⅜
29	13	25	2¼	N.P.	Root Refining pr. pfd.	.....	.....	.....	.....	.....	.....
11	3	8⅝	2	N.P.	Ryan Consolidated...	1,100	2¾	2¾	2½	2½	— ⅜
5⅞	1⅞	2½	½	10	Salt Creek Consol.....	100	1	1	1	1	— ⅜
25⅞	9	15¼	5¼	10	Salt Creek Producers.	1,100	6¾	7	6⅝	6⅞	— ⅛
33⅛	10	8	1¾	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
...	...	39⅛	39	25	Signal Oil & Gas A...	.....	.....	.....	.....	.....	.....
24	9	17	6	N.P.	Southland Royalty...	1,400	6½	6¾	6¼	6⅝	+ ⅛
12	4	10	2	5	Sunray Oil.....	12,700	3⅝	5	3⅝	5	+ 1¼
23	7⅛	19½	8	N.P.	Texon Oil & Land....	400	12⅞	12⅞	12	12	— ⅞
81⅛	8⅞	16	8	10	Venezuela Mexico....	.....	.....	.....	.....	.....	.....
6½	1⅛	4½	¾	5	Venezuela Petroleum.	3,900	1	1⅛	1	1	0
9⅛	2	5	2	1	Woodley Petroleum...	300	2½	2½	2	2	0
5⅜	¼	2½	⅜	N.P.	Y Oil & Gas.....	.....	.....	.....	.....	.....	.....

*New High †New Low §From close of preceding week.

New York Bonds

Week Ending Feb. 20

	High	Low	Last	Change
Assoc. Oil gold 6s.....	103½	102¾	103½	+ ¾
Atlantic Refg. deb. 5s...	103	102¼	102¼	0
Cal. Pet. 5s.....	97	96½	97	+ ½
Cal. Pet. 5½s.....	100⅞	100¼	100½	0
Humble Oil & Refg. 5s..	102	101⅜	102	+ ⅛
Humble Oil & Refg. 5½s	102⅝	102½	102½	+ ⅛
Pan Amer. P & T 6s....	102¼	102	102¼	+ ¼
Pan Amer. P & T 6s....	63¼	62⅛	62⅛	— ⅞
Phillips Pet. 5¼s.....	88½	87	87	—1½
Pure Oil 5½s.....	94	92	93¾	+1
Pure Oil 5½s.....	92	91½	92	0
Richfield Oil of Calif. 6s.	65	64½	65	0
Shell Union Oil 5s.....	85⅝	83½	85	0
Shell Union 5s with war..	88	86¼	87¼	— ¾
Sinclair Con. Oil 7s.....	100	98	100	+ ¼
Sinclair Con. Oil 6½s...	95¾	95	95	— ¾
Sinclair Con. Crude 5½s	102	101¾	101¾	— ⅛
Sinclair Pipeline.....	100⅛	99⅞	100⅛	— ⅜
Skelly Oil 5½s.....	77	75	75½	—1½
S. O. N. J. 5s.....	103¾	103¼	103⅜	— ⅜
S. O. N. Y. 4½s.....	100	99½	100	0
Union Oil of Calif. 6s A..	107	106	107	+1
Union Oil of Calif. 5s C..	100¼	100	100	.0
Union Oil of Calif. 5s war.	96¾	96	96¾	+ ¼
Warner-Quinlan 6s.....	64½	59½	64	—1¼
White Eagle Oil 5½s war.	103	102¾	103	+ ¼

New York Curb Bonds

Week Ending Feb. 20

	High	Low	Last	Change
Beacon Oil 6s '36.....	97¾	97½	97¾	0
Cities Service 5s '66.....	75	74½	74½	— ½
Cities Service 5s '50.....	81	79⅝	80¼	+ ⅜
Cities Serv. G. 5½s '42..	80½	80	80	— ¼
Cities Serv. G. P. 6s '43..	86¾	86¾	86¾	0
Cont. Oil 5½s '37.....	93¾	93½	93½	0
Empire O & R 5½s '42..	78¼	77¾	77⅞	— ⅜
Gulf Oil 5s '37.....	102½	101¾	102½	+ ¾
Gulf Oil 5s '47.....	103⅜	103⅜	103½	0
Indep. Oil 6s '39.....	99	99	99	0
Sun Oil 5½s '39.....	102	101¼	101¼	— ¼
Valvoline Oil 7s '37.....	96⅛	95	96⅛	—1⅞

Oil Dividends

	Amount	Payable	Stock of Record
Atlantic Refining q.....	25c	Mar. 16	Feb. 21
General Asphalt q.....	75c	Mar. 16	Mar. 2
Imperial Oil q.....	12½c	Mar. 2	Feb. 14
National Transit q.....	25c	Mar. 16	Feb. 28
No. Cent. Texas pfd. q..	$1.62½	Apr. 1	Mar. 10
Prairie Oil & Gas q.....	50c	Mar. 31	Feb. 28
Prairie Pipe Line q.....	75c	Mar. 31	Feb. 28
Shell Union pfd. q.....	$1.37½	Apr. 1	Mar. 10
Signal Oil & Gas q.....	25c	Mar. 10	Feb. 28
S. O. New York q.....	40c	Mar. 16	Feb. 20
Texas Corp. q.....	75c	Apr. 1	Mar. 6
Texon Oil & Land q.....	25c	Mar. 31	Mar. 10
Valvoline Oil q.....	$1.50	Mar. 15	Mar. 14
do pfd q.....	$2	Apr. 1	Mar. 18
Chesebrough Mfg. q.....	$1	Mar. 31	Mar. 9
do extra.....	50c	Mar. 31	Mar. 9
Cities Serv m.....	2½c	Apr. 1	Mar. 10
do stock.....	½%	Apr. 1	Mar. 10
do pfd. & pref. BB m.	50c	Apr. 1	Mar. 10
do pref. B m.....	5c	Apr. 1	Mar. 10